HOKKAIDO UNIVERSITY

Title	Geographical Distribution Patterns of the Ericaceae in Sakhalin and the Kurils
Author(s)	Takahashi, Hideki
Description	Biodiversity and Biogeography of the Kuril Islands and Sakhalin vol.2
Citation	北海道大学総合博物館研究報告, 3, 1-39
Issue Date	2006-03
Doc URL	https://hdl.handle.net/2115/47838
Type	departmental bulletin paper
File Information	v. 2-1.pdf

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

Biodiversity and Biogeography of the Kuril Islands and Sakhalin (2006) 2, 1-39.

Geographical Distribution Patterns of the Ericaceae in Sakhalin and the Kurils

Hideki Takahashi

The Hokkaido University Museum, Sapporo 060-0810, Japan

Abstract Distribution patterns of thirty-one species of the Ericaceae native to Sakhalin and the Kuril Archipelago were analyzed quantitatively based on the herbarium specimens deposited in the main Japanese herbaria. *Ledum palustre* s. lat., *Vaccinium vitis-idaea* and *Vaccinium uliginosum* represent the three most abundant species of the Ericaceae in the regions. Many Sakhalin-Kurils indices (S-K indices) of the species of the Ericaceae show negative numbers, and it reflects more predominant arctic-alpine "heath" tundras found in the Kurils than in Sakhalin. Most species with high positive S-K indices meaning a distribution bias toward Sakhalin, have the circumpolar or Northeast Eurasian distribution patterns. On the other hand, most species with low negative S-K indices meaning a distribution bias toward the Kurils, have the distribtuion patterns confined to Japan and its neighbors, or the North Pacific region.

Key words: distribution, Ericaceae, Kurils, Sakhalin, S-K index

Introduction

Arctic-alpine and boreal plant species have migrated northward in the interglacial ages and southward in the glacial ages along Sakhalin and/or the Kuril Islands between the Japanese Archipelago and the Eurasian Continent during the Quarternary period. Thus, Sakhalin and the Kurils are fascinating regions to the botanists retaining a keen interest in the palnt diversity and phytogeography of Northeast Eurasia (Takahashi 2005).

The Sakhalin-Kurils index (S-K index) clarified the present geographical distribution patterns of gymnosperms in the regions (Takahashi 2004a). Following this former report, the distribution patterns of the Ericaceae are considered in this study. The family is composed of deciduous and evergreen shrubs, which mainly constitute the forest floor stratum, arctic-alpine low "heath" vegetation, and bog vegetation in Sakhalin and the Kuril Islands. The Ericaceae is regarded as one of the important main components of the boreal native flora and vegetation of the regions in question. A clarification of the present distribution patterns of the Ericaceae in Sakhalin and the Kurils will contribute to the historical study of flora and vegetation in Northeast Eurasia.

Materials and Methods

Thirty-one species of the Ericaceae are native to Sakhalin and the Kuril Islands. Specimens collected from the regions were examined in the main Japanese herbaria; KYO, MAK, SAPS, SAPT, TI and TNS (acronyms following Holmgren et al. 1990; except for SAPT which means the Herbarium of the Botanic Garden, Hokkaido University). Specimens examined are listed in Appendix. Geographical grid or island numbers in Appendix are shown in the maps of Sakhalin (Fig. 1) and the Kurils (Fig. 2).

The number of herbarium specimens excluding duplicate sheets are counted for Sakhalin (S) and the Kurils (K), and also done for three parts of each region (Table 1). The Sakhalin-Kurils index (S-K index) is formulated as S–K / S+K. The numerical value of this index changes between –1.0 and +1.0, and a higher positive number indicates more abundant distribution in Sakhalin than in the Kurils (Table 2).

Table 1. A comparison of the number of specimens of the Ericaceae between Sakhalin and the Kurils (KYO, MAK, SAPS, SAPT, TI and TNS).

Taxa	Regions	Southern	Middle	Northern	(Uncertain)	Total
1. *Andromeda polifolia*	Sakhalin	5	31	11	1	48
	Kurils	20	20	28	-	68
2. *Arcterica nana*	Sakhalin	-	-	-	-	0
	Kurils	11	24	3	-	38
3. *Arctostaphylllos uva-ursi*	Sakhalin	-	-	7	-	7
	Kurils	-	-	-	-	0
4. *Arctous alpina*	Sakhalin	13	20	7	-	40
	Kurils	15	43	18	-	76
5. *Bryanthus gmelinii*	Sakhalin	-	-	-	-	0
	Kurils	5	21	12	-	38
6. *Cassiope ericoides*	Sakhalin	-	6	-	-	6
	Kurils	-	-	-	-	0
7. *Cassiope lycopodioides*	Sakhalin	10	-	-	-	10
	Kurils	18	63	17	1	99
8. *Chamaedaphne calyculata*	Sakhalin	35	35	10	4	84
	Kurils	-	-	-	-	0
9. *Cladothamnus bracteatus*	Sakhalin	-	-	-	-	0
	Kurils	3	1	-	-	4
10. *Gaultheria miqueliana*	Sakhalin	-	-	1	-	1
	Kurils	14	14	-	-	28
11. *Harrimanella stelleriana*	Sakhalin	-	-	-	-	0
	Kurils	1	4	6	-	11
12. *Ledum palustre* s. lat.	Sakhalin	93	109	21	5	228
	Kurils	54	-	25	-	79
13. *Leucothoe grayana*	Sakhalin	2	-	-	-	2
	Kurils	24	-	-	-	24
14. *Loiseleuria procumbens*	Sakhalin	1	13	5	-	19
	Kurils	17	30	30	-	77
15. *Menziesia pentandra*	Sakhalin	8	-	-	-	8
	Kurils	15	-	-	-	15
16. *Phyllodoce aleutica*	Sakhalin	-	-	-	-	0
	Kurils	17	30	34	-	81
17. *Phyllodoce caerulea*	Sakhalin	-	16	9	-	25
	Kurils	3	-	2	-	5
18. *Rhododendron adamsii*	Sakhalin	-	6	2	-	8
	Kurils	-	-	-	-	0
19. *Rhododendron aureum*	Sakhalin	26	11	2	1	40
	Kurils	24	50	30	-	104
20. *Rhododendron brachycarpum*	Sakhalin	-	-	-	-	0
	Kurils	2	-	-	-	2
21. *Rhododendron lapponicum*	Sakhalin	-	20	2	1	23
	Kurils	-	-	-	-	0

In Sakhalin, "Southern" is the part from <74> to <56>, "Middle" is from <55> to <28>, and "Norhtern" is from <27> to <4> in the grid (see Fig. 1).

In the Kurils, "Southern" is the region of the Habomais <23>, Shikotan <22>, Kunashir <21> and Iturup <20>, "Middle" is the region from Urup <19> to Makanrushi <05>, and "Northern" is the region of Antsiferova <04>, Paramushir <03>, Shumshu <02> and Atlasova <01> (see Fig. 2).

(Uncertain) means the specimens without accurate localities.

Table 1. continued.

Taxa	Regions	Southern	Middle	Northern	(Uncertain)	Total
22. *Rhododendron tschonoskii*	Sakhalin	-	-	-	-	0
	Kurils	1	-	-	-	1
23. *Therorhodion camtschaticum*	Sakhalin	24	9	-	-	33
	Kurils	53	46	34	-	133
24. *Therorhodion redowskianum*	Sakhalin	-	8	-	-	8
	Kurils	-	-	-	-	0
25. *Vaccinium microcarpum*	Sakhalin	13	20	4	1	38
	Kurils	6	4	3	-	13
26. *Vaccinium ovalifolium*	Sakhalin	58	35	3	1	97
	Kurils	18	7	2	-	27
27. *Vaccinium oxycoccus*	Sakhalin	36	22	11	2	71
	Kurils	33	15	15	-	63
28. *Vaccinium praestans*	Sakhalin	37	14	2	3	56
	Kurils	46	9	-	1	56
29. *Vaccinium smallii*	Sakhalin	60	28	-	-	88
	Kurils	21	-	-	-	21
30. *Vaccinium uliginosum*	Sakhalin	28	48	16	3	95
	Kurils	33	50	31	-	114
31. *Vaccinium vitis-idaea*	Sakhalin	82	49	14	6	151
	Kurils	61	67	28	-	156

Results and Discussion

Species distribution pattern

ERICACEAE

1. Andromeda polifolia L., Sp. Pl.: 393 (1753).

Japanese name: Hime-shakunage.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 83, the second from the upper right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 51V.

N. Hemisphere: Hultén (1968) p. 727, the upper; Hultén & Fries (1986) Map 1456.

This species is evergreen shrubs with stems decumbent and ascending apically to 30 cm high, growing in wet high moors. It has a broad circumpolar subarctic-boreal distribution in the Northern Hemisphere (Hultén and Fries 1986).

Andromeda polifolia occurs in Sakhalin, with fewer occurrences in the southern part and especially more abundant in the middle part of Sakhalin. It is evenly found from the southern to northern parts in the Kurils (Table 1). It shows comparatively high abundance in these regions (S+K= 116), and the S-K index (–0.17) means that *A. polifolia* occurs abundantly in the Kurils as well as in Sakhalin (Table 2).

2. Arcterica nana (Maxim.) Makino in Bot. Mag. Tokyo **20**: 85 (1906); *Andromeda nana* Maxim. in Bull. Acad. Sci. St.-Pét. **18**: 47 (1873); *Pieris nana* (Maxim.) Makino in Bot. Mag. Tokyo **8**: (213) (1894), **18**: 18 (1904).

Japanese name: Komeba-tsugazakura.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhlain and the Kurils: Horikawa (1976) p. 704.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 52A.

This species is evergreen dwarf shrubs with stems decumbent and somewhat ascending apically to 10 cm high, growing in stony places of alpine tundras. It is confined to Japan and the Kurils, but extends to Kamchatka (Khokhryakov and Mazurenko 1991; Yamazaki 1993).

Arcterica nana is absent from Sakhalin (Table 1; also see Smirnov 2002), which is indicated by its extreme negative S-K index (–1.00). On the other hand, it occurs in the southern to northern Kurils, especially more frequently in the middle Kurils (Table 1). This general distribution pattern in Sakhalin and the Kurils has been supported by Horikawa (1976), Yamazaki (1981, 1993) and Khokhryakov and Mazurenko (1991).

Note: Kron et al. (1999) treated this species as *Pieris nana*, but *P. nana* is always sister to the other *Pieris* species in several phylogenetic analyses based on morphology, *rbcL*, and *matK* sequences (Kron et al. 1999). I adopt a distinct genus *Arcterica* segregated from *Pieris* in this paper.

3. Arctostaphylos uva-ursi (L.) Spreng. in Syst. Veg. **2**: 287 (1825); *Arbutus uva-ursi* L., Sp. Pl.: 395 (1753).

Japanese name: Kuma-kokemomo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 83, the third from the upper right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 52V.

N. Hemisphere: Hultén (1968) p. 729, the upper (for *A. uva-ursi* var. *uva-ursi*) and the lower (for *A. uva-ursi* var. *adenotricha*); Hultén and Fries (1986) Map 1454.

This species is evergreen and matted shrubs with decumbent stems to 1.5 m long, growing especially in dry sandy places. It has a widespread circumpolar distribution in the Norhtern Hemisphere with a gap in the Bering area including the Kurils, Kamchatka and main islands of the Aleutians (Hultén and Fries 1986). This means the continental habit of this species.

Arctostaphylos uva-ursi is found rarely in northern Sakhalin, but has not been recorded from the entire Kuril Islands (Tables 1 and 2; S-K index= +1.00). It has not been recorded from the southern and middle parts of Sakhalin (Khokhryakov and Mazurenko 1991; Smirnov 2002). The populations found in northern Sakhalin may be supplied mainly from those of eastern Siberia.

4. Arctous alpina (L.) Nied. in Engl., Bot. Jahrb. **12**: 180 (1890); *Arbutus alpinus* L., Sp. Pl.: 395 (1753); *Arctostaphylos alpina* (L.) Spreng. in Syst. Veg. **2**: 287 (1825); *Arctous japonica* Nakai in Bot. Mag. Tokyo **35**: 134 (1921); *Arctous alpina* (L.) Nied. var. *japonica* (Nakai) Takeda in Bull. Biogeog. Jap. **4**: 288 (1934).

Japanese name: Urashima-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 83, the lower right.

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1976) p. 705.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 52G (for *A. alpina*) and Fig. 53B (for *A. japonica*).

N. Hemisphere: Hultén (1968) p. 730, the upper (as *Arctostaphylos alpina*); Hultén & Fries (1986) Map 1455 (as *Arctostaphylos alpina*).

This species is deciduous dwarf shrubs with stems decumbent and ascending apically to 10 cm high, growing in stony places. It has a circumpolar arctic-montane distribution of the Northern Hemisphere (Hultén and Fries 1986).

Arctous alpina occurs in southern to northern Sakhalin, with comparatively lower abundance in the northern part (Table 1). It is distributed in the entire Kuril Islands, especially with high abundace in the middle Kurils. This species occurs more or less abundantly (S+K= 116) in Sakhalin and the Kurils, and the S-K index (–0.31) means more or less similar abundance between Sakhalin and the Kurils.

Note: Most plants of Sakhalin and the Kurils have been sometimes regarded as *A. japonica* Nakai (=*A. alpina* var. *japonica*), characterized by wider and larger leaves than var. *alpina*. But I treat it as the widespread species *A. alpina* in the present study. The specific epithet "*alpinus*" in most Japanese references is incorrect.

5. Bryanthus gmelinii D.Don in Edinb. New Philos. J. **17**: 160 (1834).

Japanese name: Chishima-tsugazakura.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 265.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 44B.

This species is evergreen dwarf and matted shrubs with slender stems decumbent to 20 cm long, growing in sunny and stony places. It is native to Japan (N. Honshu and Hokkaido), the Kurils and Kamchatka (Khokhryakov and Mazurenko 1991; Yamazaki 1993). The geographical distribution pattern of this species is more or less similar to that of *Arcterica nana*.

Bryanthus gmelinii is absent from Sakhalin but it occurs in the southern to northern Kuril Islands (S-K index= –1.00), especially with high abundance in the middle Kurils (Table 1). The distribution pattern in these regions has been genearlly supported by Horikawa (1972), Yamazaki (1981, 1993), Khokhryakov and Mazurenko (1991) and Smirnov (2002). This distribution and abundance pattern in Sakhalin and the Kurils; i.e., a geographical gap in Sakhalin and abundance in the middle Kurils, is the same in *Arcterica nana*.

6. Cassiope ericoides (Pall.) D.Don in Edinb. New Philos. J. **17**: 158 (1834); *Andromeda ericoides* Pall., Fl. Ross.**1**: 56 (1788); *Cassiope redowskii* G. Don, sensu Miyabe and Tatewaki in Trans. Sapporo Nat. Hist. Soc. **14**(2): 77 (1935); *Cassiope redowskii* G. Don, sensu Sugawara in Plants of Saghalien: 255 (1937).

Japanese name: Karafuto-iwahige.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 84, the upper left.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 50B.

This species is evergreen shrubs with stems decumbent and ascending apically to 30 cm high, growing in stony places and lichen tundras. It occurs from the eastern Siberia to Kamchatka (Khokhryakov and Mazurenko 1991).

Cassiope ericoides is rarely found in Sakhalin but not in the Kurils (Tables 1 and 2; S+K= 6, S-K index= +1.00). Within Sakhalin, the present study shows only localities from the middle part, but the localities from the northern part has been also recorded by Khokhryakov and Mazurenko (1991) and Smirnov (2002).

Note: Specimens from the middle part of Sakhalin shows more or less shorter hairs at the leaf margin than those of typical *C. ericoides* from eastern Siberia.

7. Cassiope lycopodioides (Pall.) D.Don in Edinb. New Philos. J. **17**: 158 (1834); *Andromeda lycopodioides* Pall., Fl. Ross. **1**: 55 (1788).

Japanese name: Iwahige.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 84, the second from the upper left.

Table 2. A comparison of S-K index and S+K of the Ericaceae between Sakhalin and the Kurils (KYO, MAK, SAPS, SAPT, TI and TNS). Taxa are listed in order of S-K index and other characteristics of the species are listed for comparison.

Taxa (the number in text)	S-K index	S+K	Fruits	Leaves	Habit	Distr.
Cassiope ericoides (6)	+1.00	6	C	E	A-D	E
Arctostaphylos uva-ursi (3)	+1.00	7	B	E	D	C(PG)
Rhododendron adamsii (18)	+1.00	8	C	E	A	E
Therorhodion redowskianum (24)	+1.00	8	C	D	A-D	E
Rhododendron lapponicum (21)	+1.00	23	C	E	A	C(SG)
Chamaedaphne calyculata (8)	+1.00	84	C	E	A	C(A/PG)
Phyllodoce caerulea (17)	+0.67	30	C	E	A-D	C(SG)
Vaccinium smallii (29)	+0.61	109	B	D	A	J
Vaccinium ovalifolium (26)	+0.56	124	B	D	A	P
Vaccinium microcarpum (25)	+0.49	51	B	E	D	C
Ledum palustre s. lat. (12)	+0.49	307	C	E	A	C(A/PG)
Vaccinium oxycoccus (27)	+0.06	134	B	E	D	C(PG)
Vaccinium praestans (28)	0.00	112	B	D	A-D	(E)-P(W)
Vaccinium vitis-idaea (31)	-0.01	307	B	E	A-D	C
Vaccinium uliginosum (30)	-0.09	209	B	D	A	C
Andromeda polifolia (1)	-0.17	116	C	E	A	C
Menziesia pentandra (15)	-0.30	23	C	D	A	J
Arctous alpina (4)	-0.31	116	B	D	A-D	C
Rhododendron aureum (19)	-0.44	144	C	E	A	E-P(W)
Therorhodion camtschaticum (23)	-0.60	166	C	D	A-D	P
Loiseleuria procumbens (14)	-0.60	96	C	E	D	C(SG)
Cassiope lycopodioides (7)	-0.81	109	C	E	D	P
Leucothoe grayana (13)	-0.85	26	C	D	A	J
Gaultheria miqueliana (10)	-0.93	29	B	E	A-D	J-P(W)
Phyllodoce aleutica (16)	-1.00	81	C	E	A-D	P
Bryanthus gmelinii (5)	-1.00	38	C	E	D	P(W)
Arcterica nana (2)	-1.00	38	C	E	D	P(W)
Harrimanella stelleriana (11)	-1.00	11	C	E	D	P
Cladothamnus bracteatus (9)	-1.00	4	C	D	A	J
Rhododendron brachycarpum (20)	-1.00	2	C	E	A	J
Rhododendron tschonoskii (22)	-1.00	1	C	(D)	A	J

Fruits: B– berry or berrylike; C– capsules.

Leaves: D– deciduous; E- evergreen.

Habit: A– small shrubs with ascending stems; D– dwarf shrubs with decumbent stems.

Distribution pattern (Distr.): C- circumpolar; C(AG)– circumpolar with a North Atlantic gap; C(PG)– circumpolar with a North Pacific gap; C(SG)– circumpolar with a gap of Siberia; E- Northeast Eurasia (eastern Siberia to the Okhotsk Sea region); J– Japan and its adjoining regions; P– the North Pacific region (from the Okhotsk Sea region to Alaska); P(W)– the North Pacific region, but not extending to Alaska.

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 266.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 51B.

N. Hemisphere: Hultén (1968) p. 726, the lower.

This is an alpine tundra species of evergreen matted dwarf shrubs with much branched stems decumbent to 20 cm long, growing on rocks or in crevices of mountain slopes. It is native to Japan, Sakhalin, Okhotsk, the Kurils, Kamchatka, the Aleutians, Alaska and Canada (Hultén 1968; Yamazaki 1993).

Cassiope lycopodioides is found in the southern part of Sakhalin but not in middle and northern Sakhalin (Table 1). It occurs more or less abundantly in the entire Kuril Islands from south to north, especially with high abundance in the middle Kurils. High negative S-K index (-0.81) means that the distribution is biased in favor of the Kurils.

8. Chamaedaphne calyculata (L.) Moench, Methodus: 457 (1794); *Andromeda calyculata* L., Sp. Pl.: 394 (1753).

Japanese name: Yachi-tsutsuji, Horomui-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 84, the third from the upper left; Takahashi (2004b) Fig. 2.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991)

Fig. 51G.

N. Hemisphere: Hultén (1968) p.727, the lower; Hultén and Fries (1986) Map 1457.

This species is evergreen small shrubs with stems decumbent and ascending apically to 1 m high, growing in wet meadows at lowlands. It has a broad circumpolar distribution in the cooler regions of the Northern Hemisphere, with a wide distribution gap in the North Atlantic area and the absence in the islands in the North Pacific area (Hultén 1968; Hultén and Fries 1986). This geographical distribution pattern of *Chamaedaphne calyculata* suggests a continental habit of this species.

This species is found abundantly in Sakhalin but not found in the entire Kurils (Tables 1 and 2; S+K= 84, S-K index +1.00). This geographical distribution pattern has been also supported by Yamazaki (1989, 1993) and Khokhryakov and Mazurenko (1991). The lacking of the species in Sakhalin in Hultén and Fries (1986: Map. 1457) should be an error.

9. Cladothamnus bracteatus (Maxim.) T. Yamaz. in J. Jap. Bot. **63**: 163 (1988); *Tripetaleia bracteata* Maxim. in Bull. Acad. Sci. St.-Pét. **16**: 407 (1871); *Botryostege bracteata* (Maxim.) Stapf in Kew Bull. 1934: 194 (1934).

Japanese name: Miyama-hotsutsuji.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 287 (as *Tripetaleia bracteata*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 44A (as *Botryostege bracteata*).

This species is deciduous small shrubs up to 60 cm high, growing in mountain to alpine scrubs. It is confined to Japan (C. Honshu to Hokkaido), but extends to the southern and middle Kurils.

In the present study, *Cladothamnus bracteatus* is not found in Sakhalin, and its lacking has been confirmed by the former studies (Khokhryakov and Mazurenko 1991; Smirnov 2002). It occurs in the southern and middle Kurils; Iturup and Urup, thus the easternmost population of *C. bracteatus* is found in Urup (Table 1 and Appendix). The presence of this species in the Kurils have not been described by Yamazaki (1989, 1993).

10. Gaultheria miqueliana Takeda in Bot. Mag. Tokyo **32**: 195 (1918); *Gaultheria pyroloides* Hook.f. et Thoms. ex Miq. in Ann. Mus. Bot. Lugd.-Bat. **1**: 30 (1863), p. p.

Japanese name: Shiratamanoki.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 84, the lower left.

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 269.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 53A.

N. Hemisphere: Hultén (1968) p. 782, the lower.

This species is evergreen shrubs with stems ascending to 30 cm high, growing in dry and often volcanic stony places. It is distributed in Japan, northern Sakhalin, the southern to middle Kurils, southern Kamchatka and central Aleutians. Berry-like fruits with white fleshy parts could explain this somewhat disjunct distribution pattern from the long distance seed dispersal by birds.

Gaultheria miqueliana occurs rarely in the northern part of Sakhalin and occasionally in the southern and middle Kurils, but not in the norhtern Kurils (Tables 1 and 2; S+K= 29, S-K index= –0.93). This geographical distribution pattern in Sakhalin and the Kurils has been generally supported by Khokhryakov and Mazurenko (1991).

11. Harrimanella stelleriana (Pall.) Coville in Proc. Washing. Acad. Sci. **3**: 574 (1901); *Andromeda stelleriana* Pall., Fl. Ross. **1**: 58 (1788); *Cassiope stelleriana* (Pall.) DC., Prodr. **7**: 611 (1839).

Japanese name: Jimukade.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 270.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 44V.

N. Hemisphere: Hultén (1968) p. 726, the upper (as *Cassiope stelleriana*).

This species is evergreen dwarf creeping shrubs with much branched slender stems decumbent to 30 cm long, growing in stony places of alpine tundras. It is distributed in Japan (central Honshu and Hokkaido), the Kurils, Kamchatka, the Aleutians, Alaska and Canada (Hultén 1968; Yamazaki 1993). The geographical distribution pattern of this species is the same as that of *Cassiope lycopodioides*.

Harrimanella stelleriana is not found in Sakhalin, but comparatively rarely occurs in the Kurils (Tables 1 and 2; S+K= 11, S-K index= –1.00). In the southern Kurils it rarely occurs (Table 1). This general distribution pattern in these regions has been supported by Horikawa (1972), Yamazaki (1981, 1993) and Khokhryakov and Mazurenko (1991).

12. Ledum palustre L., Sp. Pl.: 391 (1753), sensu lato

Japanese name: Iso-tsutsuji s. lat.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 84, the upper right to p. 85, the second from the upper left (as *L. decumbens*, *L. hypoleucum*, *L. maximum*, *L. palustre*, *L. palustriforme* and *L. subulatum*).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 271 (for *L. palustre* var. *diversipilosum*); Horikawa (1976) p. 707 (for *L. palustre* var. *decumbens*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 42-43 (as the above mentioned species by Smirnov (2002))

N. Hemisphere: Hultén (1968) p. 717, the lower (for *L. palustre* subsp. *decumbens* and subsp. *palustre*) to p. 718, the upper (for *L. palustre* subsp. *groenlandicum*); Hultén and Fries (1986) Map. 1451 (as *L. palustre* complex)

The species s. lat. is low suberect or somewhat decumbent shrubs 30–70 cm high, growing in wet mires or sometimes alpine stony places. It has a circumpolar distribution in the cooler regions of the Northern Hemisphere with a North Atlantic gap and the absence

in the main islands of the Aleutians in the N. Pacific area (Hultén and Fries 1986). This shows a similar distribution pattern as that of *Chamaedaphne calyculata* (Table 2).

Ledum palustre s. lat. is found very abundantly in the entire Sakhalin and moderately in the Kurils (Tables 1 and 2; S+K= 307, S-K index= +0.49), but with the lacking in the middle Kurils (Table 1). Thus, its distribution pattern is regarded as the bilateral in the Kuril Archipelago. It is one of the most abundant species of the Ericaceae in Sakhalin and the Kurils.

Note: *Ledum palustre* complex is taxonomically confusing. Russian taxonomists generally recognize six "species" in these regions (Khokhryakov and Mazurenko 1991; Smirnov 2002; Barkalov and Taran 2004), but in this study I follow Hultén (1968) and Hultén and Fries (1986) who recognized as the complex composed of several subspecies.

13. Leucothoe grayana Maxim. in Bull. Acad. Sci. St.-Pét. **18**: 46 (1872); *Eubotryoides grayana* (Maxim.) H.Hara in J. Jap. Bot. **11**: 621 (1935).

Japanese name: Hanahirinoki.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1976) p. 708.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 52B (as *Eubotryoides grayana*).

This is a cool-temperate species of deciduous shrubs with the height of 1.5 m, growing generally in stony and rocky places of deciduous forests or scrubs. It is confined to Japan (Honshu and Hokkaido), but extends to southern Sakhalin and the southern Kurils.

Leucothoe grayana very rarely occurs in southern Sakhalin, and is found moderately in the southern Kurils; Shikotan, Kunashir and Iturup (Table 1 and Appendix). The presence of this species in southern Sakhalin have not been noticed in the most references (Horikawa 1976; Yamazaki 1989, 1993; Smirnov 2002; Barkalov and Taran 2004), although Sugawara (1937) recorded the species from southern Sakhalin. The author verified one old specimen from Mt. Omanbetsu of southeastern Sakhalin (see Appendix). This should be an endangered plant species in Sakhalin. Horikawa (1976) and Yamazaki (1989, 1993) did not notice the presence of this species in the southern Kurils also.

14. Loiseleuria procumbens (L.) Desv. in J. Bot. **1**: 35 (1814); *Azalea procumbens* L., Sp. Pl.: 151 (1753).

Japanese name: Minezuô.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the third from the upper left.

Japan and its neighbors incl. Hokkaido and the Kurils: Horikawa (1972) p. 272.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 49A.

N. Hemisphere: Hultén (1968) p. 720, the lower; Hultén and Fries (1986) Map. 1452.

This arctic-alpine species is evergreen dwarf and matted shrubs with stems much branched and decumbent to 10 cm long, growing in sunny and stony places. It has a circumpolar distribution in the Norhtern Hemisphere, with a wide gap in Siberia (Hultén and Fries 1986).

Loiseleuria procumbens occurs in both Sakhalin and the Kurils, but more abundantly in the Kurils, especially in the middle and norhtern Kurils (Tables 1 and 2; SK index= –0.60).

15. Menziesia pentandra Maxim. in Bull. Acad. Sci. St.-Pét. **11**: 431 (1867).

Japanese name: Koyôraku-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the lower left.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 49B.

This is a cool-temperate speceis of deciduous shrubs up to 2 m high, growing on rocks and at the edges of deciduous forests. It is endemic to Japan (Kyushu to Hokkaido) and its neighboring regions; the southern parts of Sakhalin and the Kurils.

Menziesia pentandra is found only in southern Sakhalin and the southern Kurils; Shikotan, Kunashir and Iturup (Table 1, see Appendix). This general distribution pattern in these regions has been supported by Khokhryakov and Mazurenko (1993). The S-K index (–0.30) means that the occurrence of *M. pentandra* does not show a distinct difference of abundance between Sakhalin and the Kurils.

16. Phyllodoce aleutica (Spreng.) A.Heller in Muhlenbergia **1**: 1 (1900).

Japanese name: Aono-tsugazakura.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 274.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 50A.

N. Hemisphere: Hultén (1968) p. 723, the lower (for *P. aleutica* subsp. *aleutica*) and p. 724, the upper (for *P. aleutica* subsp. *glanduliflora*).

This is a subalpine to alpine species of low evergreen shrubs with stems ascending to 30 cm high, growing in moderately moist stony places, especially around the snow-beds. It is native to the North Pacific area; Japan, the Kurils, Kamchatka, the Aleutians, Alaska and Canada (Hultén 1968; Yamazaki 1993). This distribution pattern is the same in *Cassiope lycopodioides* and *Harrimanella stelleriana* (Table 2).

Phyllodoce aleutica is not found in Sakhalin, but comparatively abundantly found in the southern to northern Kurils (Tables 1 and 2; S+K= 81, SK index= –1.00). The records from Sakhalin by Hultén (1968) and Yamazaki (1981, 1993) have not been exactly ascertained by recent Russian references (Khokhryakov and Mazurenko 1991; Smirnov 2002; Barkalov and Taran 2004). It should occur very rarely in Sakhalin, if ever.

17. Phyllodoce caerulea (L.) Bab., Man. Brit. Bot.: 194 (1843).

Japanese name: Ezono-tsugazakura.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the third from the upper right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 49V.

N. Hemisphere: Hultén (1968) p. 723, the upper (as "*P. coerulea*"); Hultén and Fries (1986) Map. 1453.

This is an arctic and alpine species of low evergreen shrubs with stems ascending to 30 cm high, growing in moderately moist stony places. The habitat of this species doesn't seem to be substantially different from that of *Phyllodoce aleutica*. It has a circumpolar distribution of the Northern Hemisphere with some gaps including Siberian region (Hultén and Fries 1986).

Phyllodoce caerulea occurs more abundantly in Sakhalin than in the Kurils (Tables 1 and 2; S-K index= +0.67). This abundance pattern is different from that of closely related *P. aleutica*. Within Sakhalin, it has not been recorded from the southern part. It occurs rarely in the southern and northern Kurils with a gap in the middle Kurils, thus its distribution pattern is recognized as the bilateral one in the Kurils (Table 1).

Note: Hybrid swarms are easily formed where the ranges of the two *Phyllodoce* species overlap (see Toyokuni 1988; p. 260-261), thus it is often difficult to determine the herbarium specimens of *Phyllodoce* exactly. Presumed hybrids between *Phyllodoce aleutica* and *P. caerulea* were found from Mt. Chacha of Kunashir, the southern Kurils (see Appendix).

18. Rhododendron adamsii Rehder et Wilson, Monogr. Azalea: 190 (1921).

Japanese name: Karafuto-miyamatsutsuji.

[Representative distribution maps]

Sakhalin: Yamazaki (1996) Map 2; Smirnov (2002) p. 85, the lower right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 46A.

This species is evergreen low shrubs up to 1 m high, growing in rocky places of alpine tundras. It is distributed in eastern Siberia, Aldan, Kolyma, Okhotsk and Sakhalin, but does not extend to Japan. A closely related species to it is regarded as *R. anthopogon* D.Don of the Himalayas (Khokhryakov and Mazurenko 1991).

Rhododendron adamsii is more or less rarely found in middle and northern Sakhalin, and it has not been recorded from the Kurils (Tables 1 and 2; S+K= 8, S-K index= +1.00).

19. Rhododendron aureum Georgi, Bemerk. Reise Russ. Reiche **1**: 214 (1775).

Japanese name: Kibana-shakunage.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86.

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 277, Yamazaki (1996) Map 26 (S. Kurils).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 45V.

This species is evergreen shrubs up to 1 m high, growing in alpine scrubs. It is native to eastern Siberia, northern Korea, Japan, Sakhalin, the Kurils, Kamchatka and the Aleutians.

Rhododendron aureum is found in both Sakhalin and the Kurils, especially abundantly in the middle Kurils (Tables 1 and 2; S+K= 144). S-K index (–0.44) indicates a distribution bias more or less in favor of the Kurils (Table 2).

20. Rhododendron brachycarpum D.Don ex G.Don, Gen. Hist. Pl. **3**: 843 (1834).

Japanese name: Hakusan-shakunage.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors incl. S. Kurils: Yamazaki (1996) Map 25.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 44G.

This species is evergreen shrubs up to 3 m high, growing in mountain and subalpine forests. It is confined to Japan (Shikoku to Hokkaido), but extends to Korea and the southern Kurils (Yamazaki 1996).

Rhododendron brachycarpum is not found in Sakhalin and rarely found in the southern Kurils; Kunashir and Iturup (Tables 1 and 2; S+K= 2, S-K index= –1.00). The eastern limit of its distribution is located in Iturup. The distribution pattern in these regions has been generally supported by Khokhryakov and Mzurenko (1991) and Yamazaki (1993).

21. Rhododendron lapponicum (L.) Wahlenb., Fl. Lapp.: 104 (1812); *Azalea lapponica* L., Sp. Pl.: 151 (1753); *Rhododendron lapponicum* (L.) Wahlenb. var. *parvifolium* (Adams) Herder in Act. Hort. Petrop. **1**: 343 (1872); *Rhododendron lapponicum* (L.) Wahlenb. subsp. *parvifolium* (Adams) Yamazaki, Rev. Gen. Rhododendron Jap.: 18 (1996).

Japanese name: Sakai-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the third from the upper left (as *R. parvifolium*).

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 283; Yamazaki (1996) Map 2 (as *R. lapponicum* subsp. *parvifolium*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 46B (for *R. parvifolium*) and Fig. 46V (for *R. lapponicum*).

N. Hemisphere: Hultén (1968) p. 718, the lower (for *R. lapponicum*); Hultén and Fries (1986) Map. 1450 (for *R. lapponicum*).

This species is much branched evergreen shrubs up to 1 m high, growing in marshes of lowland. It has a circumpolar distribution of the Northern Hemisphere with a wide gap in Northeastern Europe and Western to Central Siberia (Hultén and Fries 1986).

Rhododendron lapponicum is found in middle and northern Sakhalin, especially with high abundance in middle Sakhalin, but not in southern Sakhalin and the entire Kurils (Tables 1 and 2; S+K= 23, S-K index=

+1.00). This general distribution pattern in these regions has been supported by Horikawa (1972), Yamazaki (1989, 1993) and Khokhryakov and Mazurenko (1991). This species extends to Japan with rare occurrences in eastern Hokkaido; Ochiishi.

22. Rhododendron tschonoskii Maxim. in Bull. Acad. Sci. St.-Pét. **15**: 230 (1870).

Japanese name: Kome-tsutsuji.

[Representative distribution maps]

Sakhalin: Not listed in Smirnov (2002).

Japan and its neighbors includ. S. Kurils: Hara and Kanai (1959) Map 175; Yamazaki (1996) Map 11.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 48B.

This is a temperate species of much branched semi-deciduous shrubs up to 3 m high, growing on rocky mountain slopes. It is confined to southern Korea and Japan, but extends to the southern Kurils (Yamazaki 1996).

Rhododendron tschonoskii is not found in Sakhalin, but very rarely found only in the southern Kurils; Kunashir (Tables 1 and 2; S+K= 1, S-K index= –1.00). The eastern limit of its distribution is located in Kunashir. The distribution pattern in these regions has been generally supported by Hara and Kanai (1959), Yamazaki (1989, 1993) and Khokhryakov and Mazurenko (1991).

23. Therorhodion camtschaticum (Pall.) Small in North Amer. Fl. **29**: 45 (1914); *Rhododendron camtschaticum* Pall., Fl. Ross. **1**: 48 (1784).

Japanese name: Ezo-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86, the second from the upper left (as *R. camtschaticum*)

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 279.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 48G (as *R. camtschaticum*).

N. Hemisphere: Hultén (1968) p. 719, the upper and lower (as *R. camtschaticum* subsp. *camtschaticum* and *R. camtscahticum* subsp. *glandulosum*).

This species is small deciduous shrubs decumbent and ascending apically to 40 cm high, growing in wet and stony alpine meadows. It is native to the Okhotsk Sea region including Japan (N. Honshu and Hokkaido), but extends eastward to the Aleutians and Alaska.

Therorhodion camtschaticum occurs abundantly in both Sakhalin and the Kurils (S+K= 166), but is absent in the northern part of Sakhalin (Table 1). It is found very abundantly in the entire Kurils (Table 1), and its S-K index (–0.60) indicates a distribution bias in favor of the Kurils (Table 2).

Note: The independent genus *Therorhodion* separated from *Rhododendron* was supported by the phylogenetic analysis using the *matK* data (Kron 1997).

24. Therorhodion redowskianum (Maxim.) Hutch. in Bull. Misc. Inform. Kew 1921: 204 (1921); *Rhododendron redowskianum* Maxim. in Mém. Prés. Acad. Sci. Pétersb. Div. Sav. **9**: 189 (1859).

Japanese name: Kumoma-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the lower left (as *Rhododendron redowskianum*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 48V (as *Rhododendron redowskianum*).

This is a species of deciduous shrubs up to 20 cm high, growing in stony places of alpine tundras. It is native to eastern Siberia, Kolyma-Okhotsk, Aldan, Ussuri, and Sakhalin, but does not extends to Japan. This geographical distribution pattern is more or less similar to that of *Rhododendron adamsii* (Table 2).

Therorhodion redowskianum is found only in the middle part of Sakhalin, and not found in south and north Sakhalin, and also not found in the entire Kurils (Tables 1 and 2; S+K= 8, S-K index= +1.00).

25. Vaccinium microcarpum (Turcz. ex Rupr.) Schmalh., Tr. S.-Pet. Ob. Est. **2**: 149 (1871); *Oxycoccus microcarpus* Turcz. ex Rupr. in Beitr. Pfl. Russ. Reich. **4**: 56 (1845).

Japanese name: Hime-tsuru-kokemomo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85 the upper right (as *Oxycoccus microcarpus*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 57B (as *Oxycoccus microcarpus*).

N. Hemisphere: Hultén (1968) p. 735, the lower (as *Oxycoccus microcarpus*); Hultén and Fries (1986) Map 1459.

This is a boreal species of evergreen dwarf shrubs with slender stems creeping up to 50 cm long, growing in boggy places. It has a wide circumpolar distribution of the Northern Hemisphere (Hultén and Fries 1986).

Vaccinium microcarpum occurs in Sakhalin and the Kurils (S+K= 51), but the S-K index (+0.49) means a distributional bias more or less toward Sakhalin (Tables 1 and 2).

26. Vaccinium ovalifolium Sm. in Rees, Cycl. **36**: no. 1 (1817); *Vaccinium axillare* Nakai in Bot. Mag. Tokyo **35**: 135 (1921).

Japanese name: Kurousugo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86, the upper right (as *Vaccinium axillare*)

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 55B (as *Vaccinium axillare*).

N. Hemisphere: Hultén (1968) p. 733, the lower.

This species is deciduous erect shrubs up to 1 m high, growing at the edges of deciduous forests and scrubs of subalpine to alpine zones. It is distributed in the northern regions of the North Pacific area; Japan (C. Honshu to Hokkaido), Sakhalin, the Kurils, Kamchatka, the Aleutians, Alaska and western N. America.

Vaccinium ovalifolium occurs abundantly in Sakhalin and the Kurils (S+K= 124), but especially commonly in southern and middle Sakhalin (Table 1). The S-K index (+0.56) indicates that this species occurs somewhat abundantly in Sakhalin than in the Kurils

(Table 2). In both Sakhalin and the Kurils the geographical distribution is biased in favor of south.

Note: Yamazaki (1987) recognized *V. ovalifolium* var. *sachalinense* for plants of N. Hokkaido and Sakhalin.

27. Vaccinium oxycoccus L., Sp. Pl.: 351 (1753); *Oxycoccus palustris* Pers., Syn. Pl. **1**: 419 (1805).

Japanese name: Tsuru-kokemomo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 85, the second from the upper right (as *Oxycoccus palustris*).

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 57A (as *Oxycoccus palustris*).

N. Hemisphere: Hultén (1968) p. 736, the upper (as *Oxycoccus palustris*); Hultén and Fries (1986) Map 1458.

This species is evergreen dwarf shrubs with slender stems creeping to 50 cm long. The species is closely related to *V. microcarpum*. It has a wide circumpolar distribution of the Northern Hemisphere, with a distribution gap in Alaska and main islands of the Aleutians.

Vaccinium oxycoccus occurs abundantly in both Sakhalin and the Kurils (Table 1; S+K= 134), and S-K index (+0.06) means that this species occurs abundantly in the Kurils as well as in Sakhalin (Table 2).

28. Vaccinium praestans Lamb. in Trans. Linn. Soc. Bot. **10**: 264 (1811).

Japanese name: Iwa-tsutsuji.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86, the second from the upper right.

Japan and its neighbors incl. Sakhalin and the Kurils: Horikawa (1972) p. 291.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 55A.

This species is deciduous dwarf shrubs with stems ascending apically to 10 cm high. It is distributed in the Okhotsk Sea region; Japan (C. Honshu to Hokkaido), Amur, Ussuri, Sakhalin, the Kurils, and Kamchatka.

Vaccinium praestans occurs more or less abundantly in Sakhalin and the Kurils (Table 1; S+K= 112), but more rarely or is absent in the northern parts of the both regions. The S-K index (0.00) means that the occurrence of this species shows a similarity in abundance between Sakhalin and the Kurils (Table 2).

29. Vaccinium smallii A.Gray in Mem. Amer. Acad. Arts Sci. (Boston), new ser. **6**: 398 (1859), in note; *Vaccinium hirtum* auct, non Thunb.

Japanese name: Ôba-sunoki.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86, the third from the upper right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 54A (as *Vaccinium hirtum*).

This is a temperate species of deciduous shrubs up to 1 m high, growing at the edges of deciduous forests in lowlands to subalpine zones. It is confined to Japan (Kyushu to Hokkaido), but extends to Sakhalin and the southern Kurils.

Vaccinium smallii is found more or less abundantly in Sakhalin and the Kurils (Table 1; S+K= 109), but more abundantly in Sakhalin (Table 2; S-K index= +0.61). The distribution is confined to the southern and middle parts of Sakhalin and the southern Kurils; Kunashir and Iturup.

30. Vaccinium uliginosum L., Sp. Pl.: 350 (1753); *Vaccinium uliginosum* L. var. *alpinum* Bigel., Fl. Boston. ed. 2: 153 (1824).

Japanese name: Kuromamenoki.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 86, the lower right.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 54B.

N. Hemisphere: Hultén (1968) p. 734, the lower (for *V. uliginosum* subsp. *alpinum* and subsp. *uliginosum*) and p. 735, the upper (for *V. uliginosum* subsp. *microphyllum*); Hultén and Fries (1986) Map. 1461.

This species is deciduous erect shrubs up to 1 m high, growing in stony and boggy places. It has a wide circumpolar distribution of the Northern Hemisphere (Hultén and Fries 1986).

Vaccinium uliginosum occurs very abundantly in the Kurils as well as in Sakhalin (Tables 1 and 2; S+K= 209, S-K index= –0.09).

31. Vaccinium vitis-idaea L., Sp. Pl.: 351 (1753); *Rhodococcum vitis-idaea* (L.) Avror. in Fl. Murm. Obl. **4**: 314 (1959).

Japanese name: Kokemomo.

[Representative distribution maps]

Sakhalin: Smirnov (2002) p. 87, the upper left.

Okhotsk Sea region: Khokhryakov and Mazurenko (1991) Fig. 56A (as *Rhodococcum vitis-idaea*).

N. Hemisphere: Hultén (1968) p. 731 (for *V. vitis-idaea* subsp. *minus* and subsp. *vitis-idaea*); Hultén and Fries (1986) Map 1460.

This species is evergreen shrubs with stems decumbent and ascending apically to 20 cm high, growing in sunny and stony places to on somewhat dark forest floors. It has a wide circumpolar distribuiton of the Norhtern Hemisphere (Hultén and Fries 1986).

Vaccinium vitis-idaea occurs very abundantly in the Kurils as well as in Sakhalin (Tables 1 and 2; S+K= 307, S-K index= –0.01).

Comments on some dubious species

The herbarium specimen of *Elliottia paniculata* (Sieb. et Zucc.) Benth. et Hook.f. (= *Tripetaleia paniculata* Sieb. et Zucc.) collected from Mt. Handa, Sakhalin by S. Sugawara (Sept. 30, 1923; No. 17831) is deposited in SAPT. But considering the distribution gap of this species in N. Hokkaido (Hara and Kanai 1958; Horikawa 1976) and the lack of this species in his floristic list (Sugawara 1937), the collection data of this herbarium specimen is very doubtful. Also, this species has not been recorded from Sakhalin by recent references (Khokhryakov and Mazurenko 1991; Smirnov 2002; Barkalov and Taran 2004). The author does not adopt

this specimen in the present study.

Vaccinium hirtum Thunb. had been recorded abundantly from middle and southern Sakhalin and the southern Kurils by Khokhryakov and Mazurenko (1991), but *V. hirtum* sensu auct. was regarded as *V. smallii* A. Gray by Smirnov (2002) and Barkalov and Taran (2004).

Vaccinium japonicum Miq. had been recorded from Sakhalin by Yamazaki (1989, 1993), but the presence of this species in Sakhalin was not supported by recent Russian references (Khokhryakov and Mazurenko 1991; Smirnov 2002; Barkalov and Taran 2004). It is not ascertained by the herbarium specimens examined in the present study.

Vaccinium yatabei Makino has been recorded from southern Sakhalin and the southern Kurils; Iturup (Khokhryakov and Mazurenko 1991; Smirnov 2002; Barkalov and Taran 2004), but this species is known only from central and northern Honshu, and not known from Hokkaido (Yamazaki 1989, 1993). Thus, the presence of this species in Sakhalin and the Kurils is doubtful. *Vaccinium yatabei* sensu Russian authors may be regarded as *V. hirtum* Thunb., but this species has not been sufficiently ascertained from Sakhalin and the Kurils until now (cf. Yamazaki 1993). The distribution of *V. hirtum* Thunb. in Sakhalin and the Kurils needs further clarification.

Distribution patterns between Sakhalin and the Kurils

A wide range of the S-K indices (–1.00 to +1.00) in the Ericaceae is different from that (+0.05 to +1.00) in gymnosperms (Takahashi 2004). The noteworthy difference in the S-K indices between the two taxonomic groups may be explained from the fact that coniferous forests are more predominant in Sakhalin and arctic-alpine "heath" tundras are found more prominently in the Kurils; especially from the middle to northern Kurils. *Ledum palustre* s. lat. (S+K= 307), *Vaccinium vitis-idaea* (S+K= 307) and *Vaccinium uliginosum* (S+K= 209) represent the three most abundant species of the Ericaceae in these regions. All these three species have the circumpolar distribution pattern. The species with more or less low S+K values have a distributional bias toward either Sakhalin or the Kurils (Table 2).

The extreme high positive S-K index (+1.00) which means the presence in Sakhalin but the absence in the Kurils, is found in the following six species; *Arctostaphylos uva-ursi*, *Cassiope ericoides*, *Chamaedaphne calyculata*, *Rhododendron adamsii*, *Rhododendron lapponicum* and *Therorhodion redowskianum*. All these species are characterized by their circumpolar or Northeast Eurasian distribution patterns (Table 2). These species followed or are following the Sakhalin route to (or from) Hokkaido; especially it is clear in *Chamaedaphne calyculata* with more or less high S+K value (see also Takahashi 2004b). Among the six species, the following four species; *Arctostaphylos uva-ursi*, *Cassiope ericoides*, *Rhododendron adamsii* and *Therorhodion redowskianum*, are characterized by rare occurrences in the northern and/or middle parts of Sakhalin, and do not extend to Hokkaido. Furthermore, *Phyllodoce caerulea* (S-K index= +0.67), *Vaccinium smallii* (S-K index= +0.61), *V. ovalifolium* (S-K index= +0.56), *V. microcarpum* (S-K index= +0.49) and *Ledum palustre* s. lat. (S-K index= +0.49), also show a distributional bias more or less in favor of Sakhalin (Table 2).

The extreme high negative S-K index (–1.00) which means the presence in the Kurils but the absence in Sakhalin, is found in the following seven species; *Arcterica nana*, *Bryanthus gmelinii*, *Cladothamnus bracteatus*, *Harrimanella stelleriana*, *Phyllodoce aleutica*, *Rhododedndron brachycarpum* and *Rhododendron tschonoskii*. All these species are characterized by their distribution patterns confined to Japan and its neighbors, or the North Pacific region (Table 2). Among the seven species, the following three species; *Cladothamnus bracteatus*, *Rhododendron brachycarpum* and *Rhododendron tschnoskii*, are especially characterized by rare occurrences only in the southern Kurils, sometimes to the middle Kurils (for *Cladothamnus*), and occur more or less commonly in the cool-temperate zone in Japan. The eastern geographical limits of these three species are located in the Kuril Archipelago. The other four species; *Arcterica nana*, *Bryanthus gmelinii*, *Harrimanella stelleriana* and *Phyllodoce aleutica*, are characterized by more or less high S+K values and the North Pacific distribution, thus these species followed or are following the Kuril route to (or from) Hokkaido. Furthermore, *Gaultheria miqueliana* (S-K index= –0.93), *Leucothoe grayana* (S-K index= –0.85), *Cassiope lycopodioides* (S-K index= –0.81), *Loiseleuria procumbens* (S-K index= –0.60) and *Therorhodion camtschaticum* (S-K index= –0.60) show a distribution bias more or less in favor of the Kurils. Especially *Arcterica nana*, *Bryanthus gmelinii*, *Cassiope lycopodioides*, *Harrimanella stelleriana* and *Loiseleuria procumbens* constitute the arctic-alpine "heath" tundras in the Kurils.

Several pairs of plant species which have the similar ecological niche and belong to the same genus, should be noticed in the regions of Sakhalin and the Kurils. The clearly differentiated distribution patterns are found in the following pairs of species; *Phyllodoce aleutica* (S-K index= –1.00) versus *P. caerulea* (S-K index= +0.67), *Cassiope lycopodioides* (S-K index= –0.81) versus *C. ericoides* (S-K index= +1.00), and *Therorhodion camtschaticum* (S-K index= –0.60) versus *T. redowskianum* (S-K index= +1.00), and more or less differentiated patterns in the pair; *Vaccinium oxycoccus* (S-K index= +0.06) versus *V. microcarpum* (S-K index= +0.49).

All the species with the extreme S-K indx value (+1.00 or –1.00) are characterized by having the capsules (Table 2), except for *Arctostaphylos uva-ursi*. At present the author can not find a reasonable explanation on this correlation. The further distributional studies on the other plant groups are necessary.

Acknowledgements

I am grateful to the directors and curators of the herbaria and botanical gardens mentioned above. The work in the Kurils was supported in part by the Biological Sciences Directorate (Biotic Surveys and Inventories Program) and the International Program Division of the U.S. National Science Foundation, grant numbers DEB-9400821, DEB-9505031, T.W. Pietsch, principal investigator; and by the Japan Society for the Promotion of Science, grant number BSAR-401, K. Amaoka, principal investigator. The work in Sakhalin was supported in part by a Grant-in-Aid for Scientific Research (B) from Japan Society for the Promotion of Science, No. 13575008 to H. Takahashi.

References

BARKALOV, V.Y. AND TARAN, A.A., 2004. A checklist of vascular plants of Sakhalin island, *In:* S.Y. STOROZHENKO, V.V. BOGATOV, V.Y. BARKALOV, A.S. LELEJ AND E.A. MAKARCHENKO, eds. *Flora and Fauna of Sakhalin Island (Materials of International Sakhalin Island Project), Part 1*, 39–66. Dalnauka, Vladivostok. (In Russian with English summary.)

HARA, H. AND KANAI, H., 1958. *Distribution Maps of Flowering Plants in Japan, Part 1.* Tokyo: Inoue Book Company.

HARA, H. AND KANAI, H., 1959. *Distribution Maps of Flowering Palnts in Japan, Part 2.* Tokyo: Inoue Book Company.

HOLMGREN, P.K., HOLMGREN, N.H. AND BARNETT, L.C., 1990. *Index Herbariorum, part 1: The Herbaria of the World, 8th ed.* Bronx: New York Bot. Gard.

HORIKAWA, Y. 1972. *Atlas of the Japanese Flora, I.* Tokyo: Gakken Co., Ltd.

HORIKAWA, Y. 1976. *Atlas of the Japanese Flora, II.* Tokyo: Gakken Co., Ltd.

HULTÉN, E., 1968. *Flora of Alaska and Neighboring Territories.* Stanford University Press, Stanford.

HULTÉN, E. AND FRIES, M., 1986. *Atlas of North European Vascular Plants.* Konigstein: Koeltz Scientific Books.

KHOKHRYAKOV, A. P. AND MAZURENKO, M.T., 1991. Ericaceae, *In:* S.S. CHARKEVICZ, S.K. CZEREPANOV, A.E. KOZHEVNIKOV, N.S. PROBATOVA AND N.N. TZVELEV, eds. *Plantae Vasculares Orientis Extremi Sovietici, vol. 5*, 119–166. Petropolis: Nauka. (In Russian.)

KRON, K.A., 1997. Phylogetenic relationships of Rhododendroideae (Ericaceae). *Amer. J. Bot.* 84, 973–980.

KRON, K.A., JUDD, W.S. AND CRAYN, D.M., 1999. Phylogenetic analyses of Andromedeae (Ericaceae subfam. Vaccinioideae). *Amer. J. Bot.* 86: 1290–1300.

SMIRNOV, A. A., 2002. *Distribution of Vascular Plants in Sakhalin Island.* Yuzhno-Sakhalinsk: Institute of Marine Geology & Geophysics. (In Russian.)

SUGAWARA, S., 1937. *Plants of Saghalien.* Toyohara. (In Japanese.)

TAKAHASHI, H., 2004a. Distribution patterns of gymnosperms in Sakhalin and a comparison with those in the Kurils: newly proposed S-K index. *Biodiversity and Biogeography of the Kurils and Sakhalin vol. 1*, 3–13. Sapporo: The Hokkaido University Museum.

TAKAHASHI, H., 2004b. Did *Myrica gale* and *Chamaedaphne calyculata* migrate southward along Sakhalin? *Hoppo-sanso* 21, 13–18. (In Japanese.)

TAKAHASHI, H., 2005. Migration routes of northern plants–Sakhalin and the Kurils. *Bunrui* 5, 89–97. (In Japanese.)

TOYOKUNI, H., 1988. *Alpine Flowers of Japan.* Tokyo: Yama-kei Publ. Co., Ltd. (In Japanese.)

YAMAZAKI, T., 1981. Ericaceae, *In:* Y. SATAKE, J. OHWI, S. KITAMURA, S. WATARI AND T. TOMINARI, eds. *Wild Flowers of Japan Herbaceous Plants III*, 8–14. Tokyo: Heibonsha Ltd., Publishers. (In Japanese.)

YAMAZAKI, T., 1989. Ericaceae, *In:* Y. SATAKE, H. HARA, S. WATARI AND T. TOMINARI, eds. *Wild Flowers of Japan Woody Plants II*, 122–156. Tokyo: Heibonsha Ltd., Publishers. (In Japanese.)

YAMAZAKI, T., 1993. Ericaceae, *In:* K. IWATSUKI, T. YAMAZAKI, D.E. BOUFFORD AND H. OHBA, eds. *Flora of Japan vol. IIIa*, 6–63. Tokyo: Kodansha.

YAMAZAKI, T., 1996. *A Revision of the Genus Rhododendron in Japan, Taiwan, Korea and Sakhalin.* Tokyo: Tsumura Laboratory.

Appendix

A list of the herbarium specimens of the Ericaceae collected from Sakhalin and the Kurils. All specimens examined were deposited in the following Japanese herbaria; KYO, MAK, SAPS, SAPT, TI and TNS. Within each region (Sakhalin or the Kurils) the specimens are listed in order of locality (from north to south). Both Sakhalin and the Kuril Archipelago is divided into three geographic parts; the northern, middle and the southern (see Figs. 1 & 2). Within Sakhalin, the figure between angle brackets indicates the grid on a map (Fig. 1). Four quarters of each grid are recognized further when we can locate the collection site. Within the Kurils, the figure between angle brackets equivalents to the island (Fig. 2). Within each quarter of the grid in Sakhalin or each island in the Kurils, the specimens are listed in order of collection date. Specimens without accurate locality are listed last in each corresponding region or part.

Collector name "K. Miyake" found in TNS is correctly described as T. Miyake in this list. Collector S. Sugawara is described as "Sugahara" in some herbaria, and similarly K. Yendo as "K. Endo", S. Komatsu as "Komatu" in some herbaria.

ERICACEAE

1. Andromeda polifolia L. [Hime-shakunage]

<SAKHALIN>

NORTH. Pomeri–Moskalivo, Takada-shokai-deitanchi <06-lower r.>, Y. Kudo & B. Ishida 7333, Aug. 31, 1923 (SAPS); N of Moskal'vo, around Lake Bol'shoye <06-lower r.>, V. Y. Barkalov 10643, Aug. 13, 2001 (SAPS); Northern end of the Gulf of Pomr', Muzjma <07-upper l.>, T. Fukuda 1900, Aug. 10, 2001 (SAPS); SW of the Gulf of Pomr, ca 2 km NW from Moskaljv <09-lower r.>, T. Fukuda 2022, Aug. 13, 2001 (SAPS); Gulf of Odoptu, Lake Pomor <11-uuper l.>, T. Fukuda 1471, Aug. 3, 2001 (SAPS); East of Gulf of Piltun, Vstrechnaya <11-upper l.>, T. Fukuda 1521, 1533, Aug. 4, 2001 (SAPS); South of Gulf of Piltun, near the Lake Pilitu <15-lower r.>, T. Fukuda 2253, Aug. 18, 2001 (SAPS); Seacoast of Chaio <19-lower l.> Y. Kusano, May 6, 1921 (SAPS); Nyiwo, tundra, prope litus <23-lower l.>, Y. Kudo & M. Tatewaki 6532, Aug. 13, 1922 (SAPS); Nyiwo, Ins. Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6548, Aug. 14, 1922 (SAPS); Nyiwo, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6585, Aug. 15, 1922 (SAPS).

MIDDLE. Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Shisuka-shicho, Chirie-gun, Akaigawa River <39-lower r.>, M. Tatewaki & Y. Takahashi 23109, Jun. 25, 1936 (SAPS); Shisuka, Nimenjo–Yamahana <44-lower l.>, B. Yoshimura & M. Hara 49, Jul. 11, 1937 (TNS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22719, Jun. 21, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22776, Jun. 23, 1936 (SAPS); Swamp between Poronaysk and Leonidovo <48-upper l.>, N. Fujii 01341, Aug. 13, 2002 (MAK 346251); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Tobani <48-upper r.>, T. Miyake, Aug. 20, 1906 (SAPS); Shisuka <48-upper r.>, I. Namikawa, Aug. 12, 1914 (SAPS); Shisuka <48-upper r.>, S. Sugawara, Jun. 7, 1928 (TI- 2 sheets); Shisuka, Experiment Forest of Kyoto University <48-upper r.>, T. Chono, Jul. 28, 1928 (TNS); Shisuka, Experiment Forest of Kyoto University <48-upper r.>, S. Okamoto, Jul. 28, 1928 (KYO); Shisuka <48-upper r.>, S. Sugawara 17381, Jul., 1928 (SAPT); Shisuka <48-upper r.>, S. Sugawara 17382, Jun., 1929 (SAPT); Shisuka <48-upper r.> H. Ohtani & Y. Imai, Jul. 20, 1930 (SAPS); Amiba <48-upper r.> G. Koidzumi, Aug. 18, 1930 (KYO); Shisuka, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Horonai River, tundra at downstream <48-upper r.>, H. Hara, Aug. 2, 1931 (TI- 2 sheets); Shisuka, Horonai-honryu, near Amiba <48-upper r.>, R. Imaseki, Jul. 17, 1941 (TNS 87228); Poronaysk, in the city <48-upper r.>, H. Takahashi 30562, Aug. 13, 2002 (SAPS); Lak. Taraika <49-upper l.>, T. Miyake, Aug. 14, 1906.08.14 (SAPS); Shisuka-shicho, Taraika–Nimenjo <49-upper r.>, B. Yoshimura & M. Hara, Jul. 10, 1937 (SAPS- 2 sheets); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1940 (TI- 2 sheets); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS); Kitashiretoko [Peninsula?] <51- to 55->, S. Sugawara 17380, Jul. 25, 1935 (SAPT); Kitashiretoko Peninsula, Naifuto <51-lower l.>, Y. Hoshino et al., Jul. 30, 1933 (SAPS); Lak. Solenuiya <51-lower r.>, K. Miyabe & T. Miyagi, Jul. 26, 1906 (SAPS); Kitashiretoko Peninsula, Funakoshi <51-lower r.>, Y. Hoshino et al., Jul. 23, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS); Shisuka, Kitashiretoko-misaki <55-lower r.>, S. Sugawara 27096, Jul. 25, 1935 (SAPS).

SOUTH. Shisuka-cho, Otasu <56-upper r.>, Y. Hoshino et al., Jul. 8, 1933 (SAPS); Maguntan <57-lower l.>, S. Saito, Aug. 5, 1929 (TI); Motodomari-shicho, Mt. Tosso-zan <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); Odasamu <59-lower l.>, S. Otagiri, Jul. 1, 1930 (KYO); Fukakusa (Kurokawa) <62-lower l.>, S. Sugawara, Aug. 10, 1922 (SAPS).

[No Locality]. Komatu, 1909 (TI- 2 sheets).

<THE KURILS>

NORTH. SHUMSHU <02>. [no locality], S. Gunji, 1898 (SAPS); near Bettobu, S. Yokoyama, Sep. 22, 1893 (SAPS- 2 sheets); [no locality], T. Ishikawa, Jun. 29, 1894 (SAPS); [no locality], T. Ishikawa, Jul. 29, 1894 (SAPS); Kataoka, Bettobu, K. Endo, Aug. 24, 1903 (SAPS); [no locality], [no collector's name], Sep., 1917 (MAK 74956); Bettobi-numa–Bettobi-gyojyo, T. Ohashi, Aug. 13, 1932 (KYO); Bettobi, J. Ohwi & R. Yoshii 18, Jul. 25, 1934 (KYO); S of Pochtareva Cape, Y. Kuwahara 151, Aug. 8, 1997 (SAPS); S of Pochtareva Cape, H. Takahashi 23404, Aug. 8, 1997 (SAPS); Babushkina Bay, H. Takahashi 23517, Aug. 10, 1997 (SAPS). PARAMUSHIR <03>. Murakami-wan, Kitahara, Jul., 1916 (TI); Tomarizaki, Y. Kudo 5738, Aug. 7, 1920 (SAPS); Chitose-wan, Y. Kudo 4852, Jun. 26, 1920 (SAPS); Shiribachi, Y. Kudo 4904, Jun. 27, 1920 (SAPS); Murakami-wan, Y. Kudo 4981, Jul. 4, 1920 (SAPS); Murakami-wan, Y. Kudo 4991, Jul. 6, 1920 (SAPS); Tomarizaki, Y. Kudo 5774, Aug. 6, 1920 (SAPS); Murakami-wan, M. Tatewaki 17242, May 29, 1930 (SAPS); Upstream of Ohtani River and foot of Mt. Hakuen., K. Kojima 1443, Jul. 31, 1932 (TNS); Suribachi Bay, J. Ohwi & R. Yoshii 5408, Jul. 22, 1934 (KYO); Kashiwahara Bay, J. Ohwi & R. Yoshii 5959, Aug. 2, 1934 (KYO); Vasil'yeva Bay, N of Lake Pernatoye, Y. Kuwahara, Aug. 3, 1996 (SAPS); Vasil'yeva Bay,

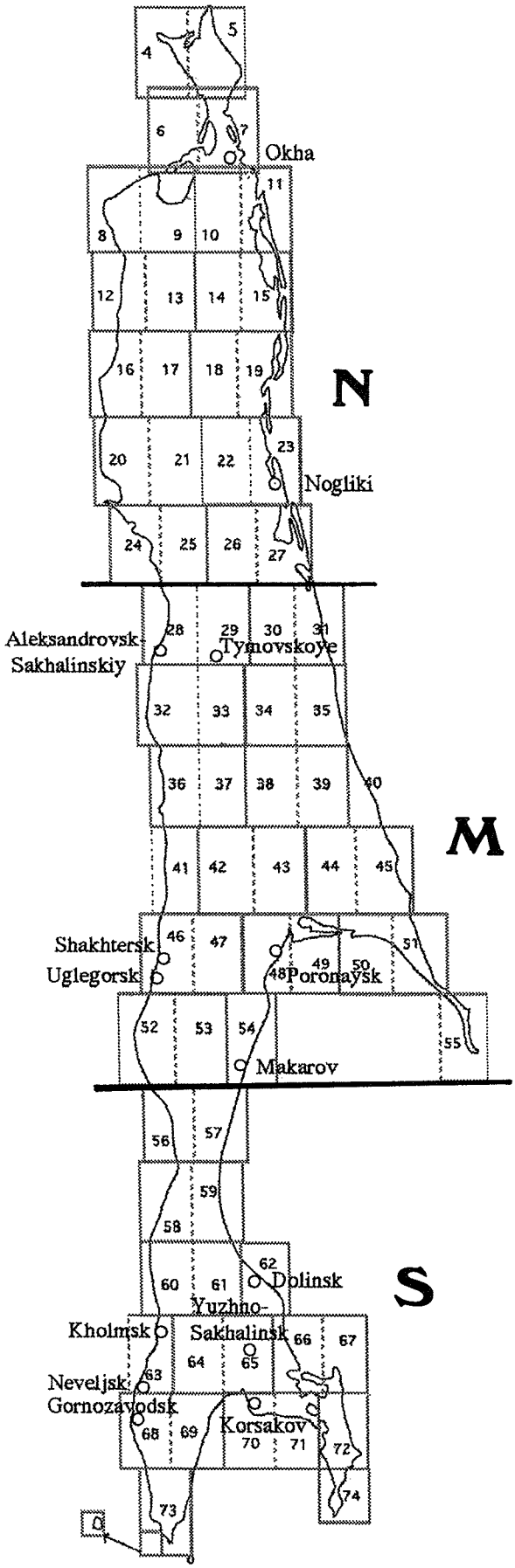

Figure 1. A map showing the division into the southern (S), middle (M) and northern (N) parts. The grid numbers are equivalent to those in a list of Appendix and the map "Atlas of Sakhlin Region part I Sakhalin (1994)".

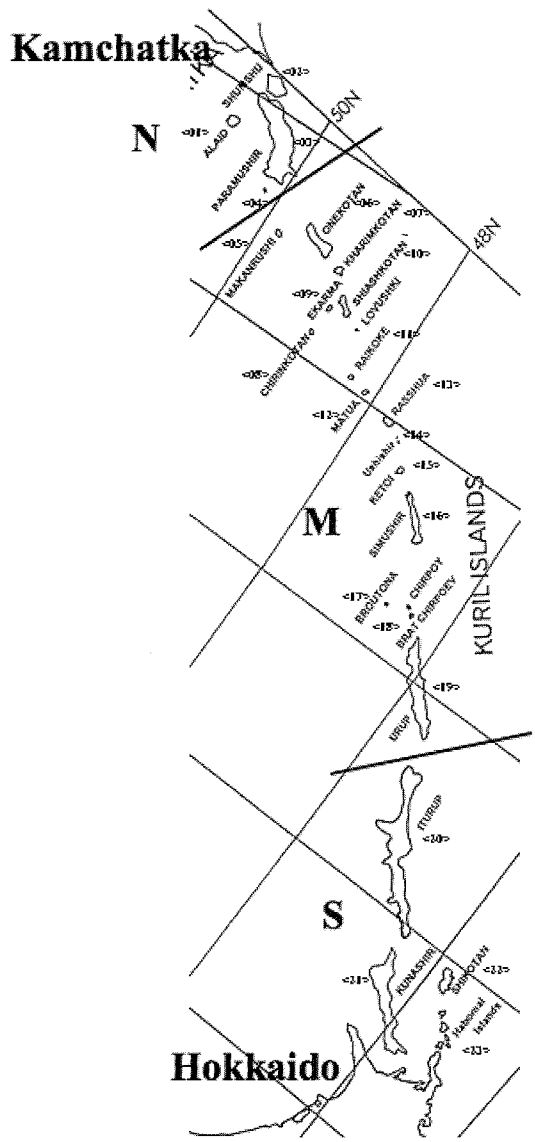

Figure 2. A map of the Kuril Islands showing the division into the sourthern (S), middle (M) and northern (N) parts. The island numbers are equivalent to those in a list of Appendix.

around Lake Pernatoye, Y. Kuwahara, Aug. 3, 1996 (SAPS); Vasil'yeva Bay., H. Takahashi 21022, Aug. 3, 1996 (SAPS); Utiosnaya Bay, V. Y. Barkalov 97040, Jul. 13, 1997 (SAPS); Vasil'yeva Bay, H. Takahashi 28048, Jul. 25, 2000 (SAPS). [Island uncertain; Shumshu or Paramushir], K. Fujita, 1944-45 (TNS 219293).

MIDDLE. SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21775, Aug. 12, 1996 (SAPS). RASSHUA <13>. Onuma, M. Tatewaki & K. Takahashi 15165, Aug. 5, 1929 (SAPS); Yoriki-hama, H. Takahashi 19256, Aug. 13, 1995 (SAPS). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15288, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15349, Aug. 17, 1929 (SAPS); Isozaki, M. Tatewaki & K. Takahashi 15577, Aug. 24, 1929

(SAPS). SIMUSHIR <16>. Broton Bay, Cap. Taketomi, Aug. 1926 (SAPS); Broton Bay, M. Tatewaki & Y. Tokunaga 11668, Aug. 14, 1928 (SAPS); Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11773, Aug. 16, 1928 (SAPS); Wan-oku, M. Tatewaki 12059, Aug. 25, 1928 (SAPS). URUP <19>. [no locality], S. Fujimura, 1891 (SAPS); Yoshinohama, K. Jimbo, Jun. 18, 1891 (SAPS); Yoshinohama, K. Uchida, Jun. 18, 1891 (SAPS); Ahunruimori, K. Jimbo, Jun. 25, 1891 (SAPS); Afunruimoi, K. Uchida, Jun. 25, 1891 (SAPS); Kobune, M. Tatewaki 9806, Aug. 26, 1927 (SAPS); Daibahama, M. Tatewaki 9906, Sep. 1, 1927 (SAPS); Van-Der-Lind Cape, M. Ohara, Aug. 26, 1995 (SAPS); Van-Der-Lind Cape, H. Takahashi 20056, Aug. 26, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20109, Aug. 28, 1995 (SAPS).

SOUTH. ITURUP <20>. Moyoro Volcano, T. Ishikawa, Sep. 5, 1890 (SAPS); Mt. Atoiya, T. Kawakami 188, Aug. 12, 1898 (SAPS); Toshiruri, T. Kawakami 396, Sep., 1898 (SAPS); Shibetoro–Moyoro, G. Aizawa, Jul. 5, 1900 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Mt. Atoiya, K. Kondo 2238, Jul. 21, 1927 (TI- 2 sheets); Oyachi, S. Saito, Aug. 11, 1928 (TI- 2 sheets); Toshimoe–Rubetsu, S. Saito 6024, Sep. 3, 1928 (TI); Moyoro–Shibetoro, B. Yoshimura & H. Yokoyama, Aug. 5, 1938 (SAPS); Tannemoe, Chishima-chosasyo, Aug. 30, [no year; prob. 1939] (SAPS); Shana vill., near wetland of Yanketou, T. Azuma et al. 3320, Jun. 24, 2002 (SAPT). KUNASHIR <21>. Seseki, M. Tatewaki 3011, Jul.20, 1923 (SAPS, SAPT); Furukamapp, M. Tatewaki 3493, Jul. 26, 1923 (SAPS); Furukamappu, Oyachi, J. Ohwi 3397, Aug. 12, 1923 (TNS 219293); Furukamappu, J. Ohwi, Aug. 20, 1931 (KYO); [no locality], [no collector's name], 1935 (KYO); Chibukaribetsu–Zaimokuiwa, K. Ito, Jun. 16, 1939 (SAPS); Chibukaribetsu–Tomari, K. Ito, Jun. 16, 1939 (SAPS); Yuzhno-Kuril'skiy, Y. Marusik, Sep. 2, 1995 (SAPS). SHIKOTAN <22>. Kiritoshi–Debari, J. Ohwi, Aug. 7, 1931 (KYO).

2. Arcterica nana (Maxim.) Makino [Komeba-tsugazakura]

<THE KURILS>

NORTH. SHUMSHU <02>. [no locality], K. Yendo, Aug., 1903 (TI); S of Pochtareva Cape, H. Takahashi 23367b, Aug. 8, 1997 (SAPS). PARAMUSHIR <03>. Mt. Sannohe-yama, J. Ohwi & R. Yoshii 6119, Aug. 9, 1934 (KYO).

MIDDLE. MAKANRUSHI <05>. [no locality], M. Tatewaki 11219, Aug. 9, 1928 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11060, Aug. 8, 1928 (SAPS); Nemo Bay, H. Takahashi 21247, Aug. 4, 1996 (SAPS). KHARIMKOTAN <07>. [no locality], M. Tatewaki 17296, Jun. 4, 1930 (SAPS); Lazurnoye Pond, H. Takahashi 28171, Jul. 28, 2000 (SAPS). EKARMA <09>. [no locality], M. Tatewaki 11378, Aug. 11, 1928 (SAPS); Cape Shpilovoy, H. Takahashi 21678, Aug. 10, 1996 (SAPS). SHIASHKOTAN <10>. Otomewan, M. Tatewaki 17339, Aun. 6, 1930 (SAPS). MATUA <12>. Mt. Fuyo, M. Tatewaki & Y. Tokunaga 12218, Sep. 5, 1928 (SAPS). RASSHUA <13>. Sonraku-wan, M. Tatewaki & K. Takahashi 15022, Aug. 4, 1929 (SAPS); Side of Mt. Chotozan, M. Tatewaki & K. Takahashi 15105, Aug. 5, 1929 (SAPS); Top of Mt. Chotozan, M. Tatewaki & K. Takahashi 15317, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19191, Aug. 12, 1995 (SAPS); Yoriki-hama, H. Takahashi 19213, Aug. 13, 1995 (SAPS); Yoriki-hama, H. Takahashi 19222, Aug. 13, 1995 (SAPS). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15319, Aug. 15, 1929 (SAPS); Stochnyy River, H. Takahashi 19605, Aug. 19, 1995 (SAPS). SIMUSHIR <16>. Broton, Uratomine, M. Tatewaki & Y. Tokunaga 11759, Aug.15,1928 (SAPS); Nakadomari, near Nakayama, M. Tatewaki & Y. Tokunaga 11901, Aug. 17, 1928 (SAPS); Lake Midori, M. Tatewaki & Y. Tokunaga 11961, Aug. 18, 1928 (SAPS); Near Simushir, M. Tatewaki & Y. Tokunaga 11865, Sep. 13, 1928 (SAPS); Nakatomari Bay, H. Takahashi 19773, Aug. 22, 1995 (SAPS); Nakatomari Bay, H. Takahashi 19783, Aug. 22, 1995 (SAPS). URUP <19>. Tokotan, M. Tatewaki 10085, Sep. 7, 1927 (SAPS).

SOUTH. ITURUP <20>. Mts. Peretarabetsu, T. Ishikawa, Aug., 1890 (SAPS); Mts. Peretarabetsu, K. Jimbo, Jun. 1, 1891 (SAPS); Mt. Moyoro, T. Kawakami 187, Aug. 12, 1898 (SAPS); Shana – Sashiusu, S. Saito, Aug. 20, 1928 (TI- 2 sheets); Mt. Sashiusu, S. Saito 6118, Aug. 22, 1928 (TI- 2 sheets); Mt. Hitokappu-yama, R. Yoshii, Aug. 13, 1933 (KYO); Minami-Chiripp, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS); Mt. Moyoro, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS). KUNASHIR <21>. [no locality], S. Murata, 1935 (KYO); Mt. Chacha, K. Ito, Aug., 1939 (SAPS). SHIKOTAN <22>. Umanose, A. Kimura, Aug. 15, 1933 (KYO).

3. Arctostaphyllos uva-ursi (L.) Spreng. [Kuma-kokemomo]

<SAKHALIN>

NORTH. Luguri–Okha <7-lower l.>, Y. Kudo & B. Ishida 7225, Aug. 31, 1923 (SAPS); Oha <7-lower r.>, Okada, Sep. 2, 1923 (TI); 15km S of Okha <10-upper r.>, H. Takahashi 31168, Jul. 28, 2003 (SAPS); Chaio-kaigan <19-lower l.>, Y. Kusano, 1921 (SAPS); Nogliki–Okha, 5km S of Val <19-lower l.>, H. Takahashi 31116, Jul. 27, 2003 (SAPS); Nogliki–Okha, 5km S of Val <19-lower l.>, H. Takahashi 31129, Jul. 27, 2003 (SAPS). Northern part of N. Sakhalin <?>, M. Arakawa, Aug., 1923 (TNS 5139589).

4. Arctous alpina (L.) Nied. [Urashima-tsutsuji, Kuma-kokemomo]

<SAKHALIN>

NORTH. SE from the Cape of Maria, around the Lake Monchigar <04-upper r.>, T. Fukuda 1704, Aug. 6, 2001 (SAPS); Around Pilewo, mountain <04-lower r.>, Y. Kudo & B. Ishida 7045, Aug. 24, 1923 (SAPS); Pilituk, dry peat <07-upper l.>, Y. Kudo & B. Ishida 7145, Aug. 28, 1923 (SAPS); Uruta, on the hill, alpine meadows <07-lower r.>, Y. Kudo & B. Ishida 7281, Sep. 1, 1923 (SAPS); East of the Gulf of Piltun, Vstrechnaya Bogs <11-upper l.>, T. Fukuda 1541, Aug. 4, 2001 (SAPS); Chaio-kaigan <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, in arenosis litoralibus <23-lower l.>, Y. Kudo & M. Tatewaki 6490, Aug. 12, 1922 (SAPS).

MIDDLE. Shisuka-shicho, Mt. Sekkai-yama (60, 61-rinpan) <39-lower l.>, B. Yoshimura & M. Hara (89), Jul. 15, 1937 (SAPS, TNS 219227); Shisuka-shicho, Chirie-gun, Naruko <45-upper r.>, M. Tatewaki & Y. Takahashi 22858, Jun. 26, 1936 (SAPS); Shikka Distr., Naruko <45-upper r.>, B. Yoshimura, Aug. 8, 1936 (SAPS); Mt. Shisuka-dake <47-upper l.>, S. Sugawara 17392, Jul., 1931 (SAPT); Shisuka-shicho, Motomari <51-upper l.>, Y. Hoshino et al., Sug. 3, 1933 (SAPS); Lak. Solenuiya <51-lower r.>, K. Miyabe & T. Miyagi, Jul. 26,

1906 (SAPS); Chirie, back of settlement <51-lower r.>, J. Ohwi, Aug. 1, 1932 (KYO); Kitashiretoko Peninsula, Funakoshi <51-lower r.>, Y. Hoshino et al., Jul. 23, 1933 (SAPS); Shisuka, Nushike <51-lower r.>, S. Sugawara 26994, Jul. 24, 1935 (SAPS); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 31, 1907 (TNS 397515); Kitashiretoko Peninsula, Enton <55-upper l.>, Y. Hoshin et al., Jul. 21, 1933 (SAPS); Kitashiretoko Peninsula, Enman–Rosoku-iwa <55-upper r.>, Y. Hoshino et al., Jul. 21, 1933 (SAPS); Kitashiretoko Peninsula, Harato-zaki <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS).

SOUTH. E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS, TNS 380588); Mt. Tosso <57-lower l.>, S. Sugawara 17391, Jul., 1925 (SAPT); Mt. Tosso <57-lower l.>, G. Yamada, Aug. 4, 1926 (KYO); Mt. Tosso <57-lower l.>, N. Hiratsuka, Jul. 20, 1927 (TNS 513986); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Nupuripo <57-lower l.>, S. Saito, Aug. 3, 1929 (TI- 2 sheets); Upper part of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); 80 Km N of Dolinsk, Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29575, Aug. 2, 2001 (SAPS); Kashipo, Kitanodake <57-upper r.>, A. Abumiya et al., Aug. 13, 1932 (SAPS); Kashipo, Horonaipo-dake <57-upper r.>, A. Abumiya et al., Aug. 15, 1932 (SAPS); E. Coast, Shiraraka <59-upper l.>, T. Miyake, Sep. 20, 1907 (SAPS, TNS 380589); Summit of Mt. Susuya <65-upper r.>, K. Numajiri, Aug. 6, 1925 (TNS); Mt. Susuya, 8-gome <65-upper r.>, H. Hara, Aug. 13, 1928 (TI).

<THE KURILS>

NORTH. SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); On the hill, K. Endo, Jul. 20, 1903 (SAPS); [no locality], K. Endo, Aug., 1903 (TNS 24123); Kodomari–Numajiri, Y. Okada, Aug. 17, 1931 (TNS 306780); Hyakuike-gahara, Y. Okada, Aug. 18, 1931 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Koseki-gawa–Shiroiwa, T. Ohashi, Aug. 28, 1932 (KYO); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5648, Jul. 28, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23374, Aug. 8, 1997 (SAPS). PARAMUSHIR <03>. Shiribachi, Y. Kudo 4905, Jun. 27, 1920 (SAPS); Murakamiwan, Y. Kudo 5014, Jul. 7, 1920 (SAPS); Nagaiwasaki, Y. Kudo 5133, Jul. 11, 1920 (SAPS); Yotsuiwahama, Y. Kudo 5177, Jul. 12, 1920 (SAPS); Shirakawa, Y. Kudo 5604, Jul. 30, 1920 (SAPS); Tomarizaki, Y. Kudo 5781, Aug. 8, 1920 (SAPS); Arakawa, Y. Okada, Aug. 10, 1931 (TNS 302685); Suribachi-wan, J. Ohwi & R. Yoshii 5354, Jul. 22, 1934 (KYO); Vasil'yeva Bay, side of Lake Pernatoye, H. Takahashi 21037, Aug. 3, 1996 (SAPS).

MIDDLE. MAKANRUSHI <05>. [no locality], M. Tatewaki 11220, Aug. 9, 1928 (SAPS); Zakha Bay, H. Takahashi 24034, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 17285, Jun. 3, 1920 (SAPS); Nemo, M. Tatewaki 11035, Aug. 8, 1928 (SAPS); Nemo, M. Tatewaki 11145, Aug. 9, 1928 (SAPS); Minamiura, M. Tatwaki 17316, Jun. 6, 1930 (SAPS); Nemo Bay, slope, H. Takahashi 21218, Aug. 4, 1996 (SAPS); Nemo Bay, terrace, H. Takahashi 21224, Aug. 4, 1996 (SAPS); Nemo Bay, tundra, O. Kolesnikova, Jul. 27, 2000 (SAPS). KHARIMKOTAN <07>. Mishima, M. Tatewaki 17209, May 28, 1930 (SAPS); [no locality], M. Tatewaki 17305, Jun. 4, 1930 (SAPS); Lazurnoye Pond, H. Takahashi 28143, Jul. 28, 2000 (SAPS). SHIASHKOTAN <10>. Otome-wan, M. Tatewaki 17349, Jun. 6, 1930 (SAPS); Zakatnaya Bay, H. Takahashi 21830, Aug. 12, 1996 (SAPS). MATUA <12>. Dvoynaya Bay–Aynu Bay, H. Takahashi 22071, Aug. 15, 1996 (SAPS). RASSHUA <13>. Mikasa, M. Tatewaki & Y. Tokunaga 12427, Aug. 6, 1928 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14899, Aug. 3, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 15024, Aug. 4, 1929 (SAPS); Top of Mt. Chotozan, M. Tatewaki & K. Takahashi 15315, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19192, Aug. 12, 1995 (SAPS); Yoriki-hama, H. Takahashi 19164, Aug. 12, 1995 (SAPS). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & Y. Tokunaga 12561, Aug. 11, 1928 (SAPS); [no locality], M. Tatewaki & Y. Tokunaga 12544, Aug. 11, 1928 (SAPS); On the terrace, H. Takahashi 22958, Aug. 2, 1997 (SAPS). KETOI <15>. [no locality], M. Tatewaki & Y. Tokunaga 11507, Sep. 1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15177, Aug. 14, 1929 (SAPS); Minami-ura, M. Tatewaki & K. Takahashi 15464, Aug. 20, 1929 (SAPS); Isozaki, M. Tatewaki & K. Takahashi 15557, Aug. 24, 1929 (SAPS); Ishikuzurehamadai, M. Tatewaki & K. Takahashi 15752, Sep. 4, 1929 (SAPS); Stochnyy River, H. Takahashi 19565, Aug. 19, 1995 (SAPS). SIMUSHIR <16>. Broughton Bay, I. Kodama, Jun., 1898 (SAPS); Broton Bay, M. Tatewaki & Y. Tokunaga 11749, Aug. 15, 1928 (SAPS); Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11784, Aug. 16, 1928 (SAPS); Broughton Bay, M. Tatewaki 17405, Jun. 9, 1930 (SAPS); Malaya Inlet, H. Takahashi 19537, Aug. 18, 1995 (SAPS). CHIRPOI <18a>. Peschanaya Bay, H. Takahashi 19858, Aug. 23, 1995 (SAPS); Peschanaya Bay, H. Takahashi 19869, Aug. 23, 1995 (SAPS). URUP <19>. Anama–Yoshinohama, K. Uchida, Jun. 17, 1891 (SAPS); Kobune, M. Tatewaki 9816, Aug. 26, 1927 (SAPS); Tokotan, M. Tatewaki 9669, Aug. 29, 1927 (SAPS); Tokotan River, M. Tatewaki 10092, Sep. 13, 1927 (SAPS); Natalii Bay, H. Takahashi 18730, Aug. 7, 1995 (SAPS); Natalii Bay, H. Takahashi 18749, Aug. 7, 1995 (SAPS).

SOUTH. ITURUP <20>. [no locality], K. Yamagata, Oct., 1898 (SAPS); Porosu–Sokiya, B. Yoshimura & H. Yokoyama, Jul. 30, 1938 (SAPS). SHIKOTAN <22>. Mt. Shakotan-yama, [no collector's name; prob. H. Takeda], Jul. 17, 1909 (SAPS); Mt. Shakotan, S. Saito, Aug. 30, 1925 (TI); Mt. Okkaibetsu, S. Saito, Sep. 5, 1925 (TI); Nodoro–Inemoshiri, S. Saito 1582, Sep. 6, 1925 (TI); [no locality], K. Kondo 7823, Aug. 11, 1927 (TI); [no locality], K. Kondo 7834, Aug. 11, 1927 (TI- 2 sheets); Mt. Shakotan, K. Kondo 5977, Aug. 6, 1929 (TI); Chiboi, K. Kondo, Aug. 10, 1929 (TI- 2 sheets); Anama, K. Kondo (6190), Aug. 28, 1929 (TI- 2 sheets, TNS); Horobetsu–Okkaibetsu, K. Kondo, Aug. 31, 1929 (TI); Mt. Okkaibetsu, Horobetsu–Nodoro, S. Saito 317, Sep. 5, 1929 (TI); Matakotan, J. Ohwi, Jul. 19, 1931 (KYO); [no locality], K. Numajiri, [no date] (TNS 131013).

5. Bryanthus gmelinii D.Don [Chishima-tsugazakura]

<THE KURILS>

NORTH. SHUMSHU <02>. Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5610, Jul. 28, 1934 (KYO); Kodomari–Numajiri, Y. Okada, Aug. 17, 1937 (TNS); S of Pochtareva Cape, H. Takahashi 23369, Aug. 8, 1997 (SAPS). PARAMUSHIR <03>. Suribachi, Y. Emoto, Aug. 12, 1917[9?] (TI); Yotsuiwahama, Y. Kudo 5178, Jul. 12, 1920 (SAPS); Yotsuiwahama, Y. Kudo 5305, Jul. 14, 1920 (SAPS); Arakawa, Y. Okada, Aug. 11, 1931 (TNS); Mt. Yake-dake, K. Kojima 1446, Aug. 5-7, 1932 (TNS); Murayama-wan, J. Ohwi 6021, Jul. 30, 1934 (TNS); Raisha, J.

Ohwi & R. Yoshii 6021, Aug. 6, 1934 (KYO); Kakumabetsu, Mt. Sannnohe-yama, J. Ohwi (& R. Yoshii) 6122, Aug. 9, 1934 (KYO, TNS). [Island uncertain; Shumshu or Paramushir], T. Ohashi, 1932 (KYO).

MIDDLE. MAKANRUSHI <05>. [no locality], M. Tatewaki 11218, Aug. 9, 1928 (SAPS); [no locality], M. Tatewaki 11381, Aug. 11, 1928 (SAPS); Zakat Bay, H. Takahashi 24040, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11024, Aug. 8, 1928 (SAPS); Nemo, M. Tatewaki 11138, Aug. 9, 1928 (SAPS); Nemo, M. Tatewaki 11147, Aug. 9, 1928 (SAPS); M. Tatewaki, Jun. 3, 1930 (TNS); Nemo Bay, H. Takahashi 21227, Aug. 4, 1996 (SAPS). KHARIMKOTAN <07>. Nishiura, M. Tatewaki 17289, Jun. 3, 1930 (SAPS); Higashiura, M.Tatewaki 17297, Jun. 4, 1930 (SAPS); S of Lazurnoye Pond, H. Takahashi 28144, Jul. 28, 2000 (SAPS). SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 28241, Jul. 29, 2000 (SAPS). RASSHUA <13>. Side of Mt. Choto-zan, M. Tatewaki & K. Takahashi 15141, Aug.5, 1929 (SAPS); Sonraku-wan, M. Tatewaki & K. Takahashi 15288, Aug. 9, 1929 (SAPS); Yoriki-hama, H. Takahashi 19236, Aug. 13, 1995 (SAPS). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15253, Aug. 15, 1929 (SAPS); Kodakigawa, M. Tatewaki & K. Takahashi 15293, Aug. 15, 1929 (SAPS); Isozaki, M. Tatewaki & K. Takahashi 15571, Aug. 24, 1929 (SAPS); Ishikuzurehamadai, M. Tatewaki & K. Takahashi 15752, Sep. 4, 1929 (SAPS). SIMUSHIR <16>. Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11770, Aug.16, 1928 (SAPS); Nakadomari, M. Tatewaki & Y. Tokunaga 11898, Aug. 17, 1928 (SAPS).

SOUTH. ITURUP <20>. Mt. Atoiya-yama, T. Kawakami, Aug. 11, 1898 (SAPS- 2 sheets); Mt. Sashiusu, S. Saito 4006, Aug. 22, 1928 (TI- 2 sheets); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Mt. Moyoro, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS). KUNASHIR <21>. Mt. Rausu, B. Sawazaki 3723, Aug. 5, 1923 (SAPS).

6. Cassiope ericoides (Pall.) D.Don [Karafuto-iwahige] <SAKHALIN>

MIDDLE. Upstream of Hoe River, Experiment Forest of Kyushu Univ. <42-lower l.>, [no collector's name], 1930 (SAPS); Upstream of Hoe River <42-lower l.>, S. Sugawara 17420, Jul., 1932 (SAPT); Upstream of Hoe River <42-lower l.>, S. Sugawara 17421 & 17422, Aug., 1932 (SAPT- 2 sheets); Mt. Shisuka-yama <47-upper l.>, R. Kohno, Jul., 1933 (SAPS); Upstream of Shisuka River, divide <47-upper l.>, S. Sugawara 17427, Jul., 1933 (SAPT); Upstream of Shisuka River, divide <47-upper l.>, S. Sugawara 17424–17426, Aug., 1933 (SAPT- 3 sheets).

7. Cassiope lycopodioides (Pall.) D.Don [Iwahige] <SAKHALIN>

SOUTH. E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS, TNS); Mt. Tosso <57-lower l.>, S. Sugawara 17412, Jul. 12, 1925 (SAPT); E. Coast, Mt. Tosso <57- lower l.>, N. Hiratsuka (N. Hiratsuka et al.), Jul. 23, 1927 (SAPS, TNS); Mt. Nupuripo <57-lower l.>, S. Saito, Aug. 3, 1929 (TI); Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI- 2 sheets); Mt. Tosso <57-lower l.>, J. Ohwi, Jul. 22, 1932 (KYO); Mt. Tosso <57-lower l.>, S. Sugawara 17411, Jul. 18, 1935 (SAPT); Mt. Kashipo-yama <57-upper r.>, J. Ohwi, Jul. 23, 1932 (KYO); Kashipo, Nakanodake <57-upper r.>, H. Abumiya et al., Aug. 1, 1932 (SAPS); Mt. Susuya <65-upper r.>, S. Sugawara 17413 & 17414, Jul. 12, 1928 (SAPT- 2 sheets).

<THE KURILS>

NORTH. ATLASOVA <01>. Kitaura, alt. 600m, S. Ito & G. Komori, Jul. 23, 1926 (SAPS); [no locality], Y. Okada, Jul.14, 1931 (TNS). SHUMSHU <02>. (Kataokawan), K. Yendo, Jul. 13, 1903 (SAPS, TI); [no locality], K. Endo, Aug., 1903 (TNS); Kataoka-wan, M. Tatewaki 17257, May 30, 1930 (SAPS); Hyakuike-gahara, Y. Okada, Aug. 18, 1931 (TNS); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5619, Jul. 28, 1934 (KYO); Kataoka, J. Ohwi & R. Yoshii 247, Aug. 18, 1934 (KYO). PARAMUSHIR <03>. Musashi-wan, M. Aizawa, Jun. 22, 1900 (SAPS); Kuzira-wan, T. Matsubara, Jul. 24, 1917 (SAPS); Shikatanoma, Y. Kudo 5086, Jul. 11, 1920 (SAPS); Hirata-zaki, Y. Kudo 5390, Jul. 21, 1920 (SAPS); [no locality], K. Numajiri, Aug., 1926 (TNS); Chikura-dake, Y. Okada, Jul. 30, 1931 (TNS); Kuzira-hama, H. Koidzumi, Jul. 25, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Suribachi(-wan), J. Ohwi (& R. Yoshii) 5390, Jul. 22, 1934 (KYO, SAPS).

MIDDLE. MAKANRUSHI <05>. [no locality], M. Tatewaki 11223, Aug. 9, 1928 (SAPS); Zakat Bay, H. Takahashi 24000, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11042, Aug. 8, 1928 (SAPS); Minamiura, M. Tatewaki 17321, Jun. 6, 1930 (SAPS); Nemo Bay, Y. Kuwahara, Aug. 4, 1996 (SAPS); Nemo Bay, M. Yabe, Aug. 4, 1996 (SAPS); Nemo Bay, H. Takahashi 21205, Aug. 4, 1996 (SAPS); Mussel Bay–Kol'tsevoye, H. Takahashi 21404, Aug. 7, 1996 (SAPS). KHARIMKOTAN <07>. Nishiura, M. Tatewaki 17215, May 28, 1930 (SAPS). EKARMA <09>. [no locality], M. Tatewaki 11376, Aug. 11, 1928 (SAPS); Cape Shpilevoy, H. Takahashi 21671, Aug. 10, 1996 (SAPS). SHIASHKOTAN <10>. Otomewan, M. Tatewaki 17340, Jun. 6, 1930 (SAPS); Zakatnaya Bay, H. Takahashi 21829, Aug. 12, 1996 (SAPS). RAIKOKE <11>. E side of island, H. Takahashi 21900, Aug. 13, 1996 (SAPS); E side of island, H. Takahashi 21909, Aug. 13, 1996 (SAPS). MATUA <12>. Yamatowan–Ainuwan, M. Tatewaki 12153, Aug. 7, 1928 (SAPS); Mt. Fuyo, M. Tatewaki & Y. Tokunaga 12216, Aug. 7, 1928 (SAPS). RASSHUA <13>. Kitakado, M. Tatewaki & Y. Tokunaga 12465, Aug. 6, 1928 (SAPS); Mikasa, M. Tatewaki & Y. Tokunaga 12341, Aug. 6, 1928 (SAPS); [no locality], N. Hitomi 12482, Aug. 9, 1928 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 14857, Aug. 2, 1929 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14897, Aug. 3, 1929 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14906, Aug. 3, 1929 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14913, Aug. 3, 1929 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14957, Aug. 3, 1929 (SAPS); Minamikado, M. Tatewaki & K. Takahashi 14994, Aug. 4, 1929 (SAPS); Mt. Chotozan, M. Tatewaki & K. Takahashi 15313, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19060, Aug. 12, 1995 (SAPS). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & Y. Tokunaga 12540, Aug.11, 1928 (SAPS); [no locality], M. Tatewaki & K. Takahashi 15926, Sep. 14, 1929 (SAPS). USHISHIR-YANKICHA <14b>. In heath, M. Tatewaki & K. Takahashi, Jul. 30, 1929 (SAPS); Kraternaya Bay, H. Takahashi 19346, Aug. 14, 1995 (SAPS); Mountain ridge, H. Takahashi 22905,

Aug. 1, 1997 (SAPS). KETOI <15>. [no locality], S. Nishida, May 5, 1928 (SAPS); [no locality], M. Tatewaki & Y. Tokunaga 11486, Sep.1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15178, Aug. 14, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15337, Aug. 17, 1929 (SAPS); Ashizaki, sea-cliff, M. Tatewaki & K. Takahashi 15409, Aug. 18, 1929 (SAPS); Ashizaki, heath, M. Tatewaki & K. Takahashi 15430, Aug. 18, 1929 (SAPS); Shimizugawa, M. Tatewaki & K. Takahashi 15643, Aug. 30, 1929 (SAPS); Stochnyy River, meadow on marine terrace, H. Takahashi 19604, Aug. 19, 1995 (SAPS); Stochnyy River, meadow slope facing stream, H. Takahashi 19606, Aug. 19, 1995 (SAPS). SIMUSHIR <16>. Brotonzaki, M. Tatewaki & Y. Tokunaga 11699, Aug. 14, 1928 (SAPS); Nakayama, Nakadomari, M. Tatewaki & Y. Tokunaga 11905, Aug. 17, 1928 (SAPS); Simushir, M. Tatewaki & Y. Tokunaga 11866, Sep. 13, 1928 (SAPS); Simushir River, M. Tatewaki 17443, Jun. 9, 1930 (SAPS); Kitoboynaya Bay, H. Takahashi 18938, Aug. 10, 1995 (SAPS); Malaya Inlet, H. Takahashi 19529, Aug. 18, 1995 (SAPS). CHIRPOI <18a>. [no locality], I. Kodama, Jun., 1893 (SAPS); [as Three Brothers; prob. CHIRPOI], [no locality], T. Kitahara, Aug.20, 1895 (SAPS); Peschanaya Bay, H. Takahashi 19847, Aug.23, 1995 (SAPS); W of Peschanaya Bay, H. Takahashi 19897, Aug. 23, 1995 (SAPS). BRAT CHIRPOEV <18b>. [no locality], Tarao [no collector's name in MAK], Jun. 18, 1892 (SAPS, MAK 74968); Samotuga Cape, H. Takahashi 24133, Aug. 20, 1997 (SAPS); Uglovaya Bay, H. Takahashi 28506, Aug. 4, 2000 (SAPS). URUP <19>. Anama–Yoshinohama, K. Uchida, Jun. 17, 1891 (SAPS- 2 sheets); Yoshinohama, K. Jimbo, Jun. 18, 1891 (SAPS- 2 sheets); [no locality], K. Miura, Jul. 8-9, 1906 (SAPS- 2 sheets); Tokotan, M. Tatewaki 9997, Sep. 3, 1927 (SAPS); Onsenzaki, M. Tatewaki 10074, Sep. 9, 1927 (SAPS); Natalii Bay, H. Takahashi 18726, Aug. 7, 1995 (SAPS); Natalii Bay, H. Takahashi 18745, Aug. 7, 1995 (SAPS); Ukromnaya Bay, H. Takahashi 22176, Aug. 20, 1996 (SAPS).

SOUTH. ITRUP <20>. Peretarabetsu Volc., T. Ishikawa, Aug., 1890 (SAPS, TI); Perekarabets Mt., K. Jimbo, Jun. 1, 1891 (SAPS, TI); Mt. Moyoro, K. Fukuzawa, Aug. 27, 1893 (SAPS- 2 sheets); Moyoro, T. Kawakami 197, Aug. 12, 1898 (SAPS); Mt. Chirippu, T. Kawakami 97, Aug. 19, 1898 (SAPS); Rawakozima, T. Kawakami 94, Aug. 27, 1898 (SAPS); Moyoro, Chishima-chosasyo, Sep. 15, [no year; prob. 1939] (SAPS); Toro, K. Miura, Jul. 24, 1906 (SAPS- 2 sheets); Porosu–Sokiya, Ken. Miyabe & G. Tanaka, Jul. 26, 1910 (SAPS); Toshimoe, Mt. Sashiusu, S. Saito 6117 & 6119, Aug. 22, 1928 (TI- 3 sheets); Minami-Chirippu, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS); Mt. Atosa-yama, B. Yoshimura, Aug. 14, 1939 (SAPS). KUNASHIR <21>. Mt. Chacha, T. Ishikawa, Jul. 21, 1894 (SAPS- 2 sheets); Mt. Chacha, M. Nagai & M. Shimamura, Jul. 26, 1929 (SAPS- 5 sheets); Mt. Iwo-zan, Y. Matsumura, Jul. 20, 1930 (KYO); Mt. Chacha, K. Ito, Aug., 1939 (SAPS); [no locality], [no collector's name], [no date] (KYO). SHIKOTAN <22>. [no locality], K. Numajiri, Aug., 1928 (TNS).

[Island Uncertain]. S. Koriba & R. Yoshii, [no date] (KYO).

8. Chamaedaphne calyculata (L.) Moench [Yachi-tsutsuji]

<SAKHALIN>

NORTH. Pomeri–Moskarivo, Takada-shokai, on the peat <06-lower r.>, Y. Kudo & B. Ishida 7334, Aug. 31, 1923 (SAPS); Luguri–Okha <07-lower l.>, Y. Kudo & B. Ishida 7228, Aug. 31, 1923 (SAPS); Along the Baikal Bay <09-upper l.>, Y. Kudo & B. Ishida 7436, Sep. 5, 1923 (SAPS); 15km S of Okha <10-upper r.>, H. Takahashi 31182, Jul. 28, 2003 (SAPS); East coast, E of the Gulf of Piltun, Vstrechnaya <11-upper l.>, T. Fukuda 1502, 1535 & 1556, Aug. 4, 2001 (SAPS- 3 sheets); Seacoast of Chaio <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6464, Aug. 12, 1922 (SAPS); Nyiwo, Ins. Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6549, Aug. 14, 1922 (SAPS); Parukata, tundra <26-upper r.>, Y. Kudo & M. Tatewaki 6427, Aug. 10, 1922 (SAPS); Palkata <26-upper r.>, Okada, Aug. 26, 1923 (TI).

MIDDLE. Adatuim <29-upper l.>, Okada, Aug. 23, 1923 (TI); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Higashiyama <38-lower l.>, T. Miyake, Aug. 28, 1906 (SAPS); 80km N of Poronaysk, Mirnyy–Pervomayskoye <38-lower l.>, H. Takahashi 30470 & 30477, Aug. 10, 2002 (SAPS- 2 sheets); Shisuka-shicho, Chirie-gun, Mirukunai <40-lower r.>, M. Tatewaki & Y. Takahashi 22499, Jun. 15, 1936 (SAPS); Vicinity of R. Wuruna <43->, T. Miyake, Aug. 22, 1906 (SAPS); Shisuka-shicho, Shibunkoro <45-lower r.>, Y. Hoshino et al., Aug. 4, 1933 (SAPS); [illegible] River, tundra <48-?>, R. Imaseki, Jul. 16, 1941 (TNS- 2 sheet); Poronaysk–Leonidovo <48-upper l.>, H. Takahashi 30531, Aug. 13, 2002 (SAPS); Nairo, Ueshiba <48-lower l.>, K. Washimi, Jun. 10, 1931 (KYO); Nairo <48-lower l.>, S. Sugawara 17431, Jul. 1, 1933 (SAPT); Experiment Forest of Kyoto Univ. <48-lower l.?>, [collector name illegible; Y. Kobayashi?], Jul. 21, 1928 (TNS); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS); Telpenia Bay, Tarankotan <48-upper r.>, T. Miyake, Aug. 13, 1906 (SAPS); Ramotteiuri <48-upper r.>, T. Miyake, Aug. 15, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Donida <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Pamaito Detu <48-upper r.>, T. Miyake, Aug. 19, 1906 (SAPS); Shisuka <48-upper r.>, I. Namikawa, Aug. 12, 1914 (SAPS); Siska <48-upper r.>, T. Sawada, Aug. 14, 1923 (TI- 3 sheets); Shisuka, Experiment Forest of Kyoto Univ. <48-upper r.>, S. Okamoto, Jul. 28, 1928 (TNS); Shisuka <48-upper r.>, H. Ohtani & Y. Imai, Jul. 20, 1930 (SAPS); Shisuka <48-upper r.>, G. Koidzumi, Aug. 17, 1930 (KYO); Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Horonai River, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Shisuka <48-upper r.>, H. Tobita, Jul. 23, 1935 (KYO); Shisuka, Horonai River, near Amiba <48-upper r.>, R. Imaseki, Jul. 17, 1941 (TNS- 2 sheets); Shiska <48-upper r.>, S. Kitamura, Jul. 29, 1942 (KYO); Tobani <48-upper r.?>, T. Miyake, Aug. 20, 1906 (SAPS); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1940 (TI- 3 sheets); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 12, 1933 (SAPS); Kitashiretoko Peninsula, Naifuto <51-lower l.>, Y. Hoshino et al., Jul. 30, 1933 (SAPS); E. Coast, Ponkotan <54->, T. Miyake, Sep. 13, 1906 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS).

SOUTH. E. Coast, Nupuripo <57-lower l.>, T. Miyake, Sep. 18, 1906 (SAPS); Maguntan <57-lower l.>, S. Saito 985,

Aug. 5, 1929 (TI); E. Coast, Manue <59-upper l.>, T. Miyake, Sep. 22, 1906 (SAPS); E. Coast, Manue <59-upper l.>, T. Miyake, Aug. 20[?], 1907[?] (SAPS); Odasamu <59-lower l.>, T. Wada, Sep., 1942 (TI); Aihama <61-upper r.>, S. Sugawara 17432, Aug., 1931 (SAPT); Dobuki <62-upper l.>, G. Nakahara, Jun. 24, 1906 (TNS); Sakaehama <62-upper l.>, S. Komatsu, Aug. 2, 1913 (TI); Sakaehama <62-upper l.>, S. Sugawara 17429, Aug. 10, 1923 (SAPT); By Lake Hakucho <62-upper l.>, S. Sugawara 17430, Jun. 30, 1932 (SAPT); 8 Km N of Dolinsk, Nayba River <62-upper l.>, H. Takahashi 29313, Jul. 23, 2001 (SAPS); Galkinovlaskoe <62-lower l.>, T. Miyake, Jul. 11, 1906 (SAPS); Fukakusa, Kurokawa Mire <62-lower l.>, S. Sugawara, May 1, 1925 (SAPS); Kurokawa <62-lower l.>, S. Sugawara, Jun. 10, 1927 (TI); Kurokawa Mire <62-lower l.>, H. Hara, Jul. 31, 1931 (TI- 2 sheets); 6km W of Sokol town, Mal Takoy River <62-lower l.>, H. Takahashi 29191, Jul. 20, 2001 (SAPS); Kosato <64-lower r.>, [no collector's name], Aug. 22, 1913 (TI); Rutaka <64-lower r.>, [no collector's name], Aug. 22, 1913 (TI); Vladimirohuka <65-upper l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Toyokita-mura, Konuma <65-upper l.>, H. Sase, Aug. 21, 1937 (SAPS); Mitsuriohuka <65-lower l.>, G. Nakahara, Jun. 23, 1906 (TI- 2 sheets); Mituriohuka <65-lower l.>, G. Nakahara, Jun. 24, 1906 (KYO); Solowiyohuka <65-lower l.>, T. Miyake, Jun. 28, 1906 (SAPS); Mitsuriohuka <65-lower l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Vspenskoe <65-lower l.>, T. Miyake, Sep. 30, 1906 (SAPS); Soriofka <65-lower l.>, U. Faurie, Jul., 1908 (KYO); Mitsuriofka <65-lower l.>, U. Faurie, Jul. 4, 1908 (KYO); Mitsuriohuka <65-lower l.>, K. Fujii, Sep. 12, 1910 (TI); Susuya moor, Ozeretskoye <65-lower l.>, S. Noshiro et al. 9707056, Jul. 5, 1997 (TI); Kamikiminai <65-lower r.>, H. Sase, Aug. 21, 1938 (TNS 91657); Okhotskoe, Sedykh Lake <66-lower l.>, S. Tsuji et al. 603, Aug. 14, 1996 (TI); Mt. Oyakochi <67-lower l.>, T. Miyake, Jun. 25, 1908 (SAPS); Uryu <69-upper r.>, [no collector's name], Aug. 21, 1913 (TI- 2 sheets); Arakuri <71-upper r.>, S. Sugawara 17428, Jun. 19, 1935 (SAPT); Tobuchi-mura, Pont mire <71-upper r.>, H. Sase, Aug. 11, 1936 (SAPS).

[No/illegible Locality]. On the peat, U. Faurie. Oct., 1907 (KYO); Komatu, 1909 (TI); S. Otagiri, May 27, 1930 (KYO); tundra, [no collector's name], 1932 (MAK 101329).

9. Cladothamnus bracteatus (Maxim.) Yamazaki [Miyama-hotsutsuji]
<THE KURILS>

MIDDLE. URUP <19>. Chernoburka Bay, M. Nakatani, Aug. 9, 2000 (SAPS). SOUTH. ITURUP <20>. Mt. Atoiya-yama, T. Kawakami 286, Aug. 11, 1898 (SAPS); Oyachi, S. Saito 6134, Aug. 11, 1928 (TI- 2 sheets); Moyoro, B. Yoshimura & H. Yokoyama, Aug. 3, 1938 (SAPS).

10. Gaultheria miqueliana Takeda [Shiratamanoki]
<SAKHALIN>

NORTH. Near Pilewo, forest <04-lower r.>, Y. Kudo & B. Ishida 7119, Aug. 25, 1923 (SAPS).
<THE KURILS>

MIDDLE. SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21812, Aug. 12, 1996 (SAPS- 2 sheets). MATUA <12>. Dvoynaya Bay–Aynu Bay, H. Takahashi 22061, Aug. 15, 1996 (SAPS). RASSHUA <13>. Yoriki-hama, H. Takahashi 19216, Aug. 13, 1995 (SAPS). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15318, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15332, Aug. 17, 1929 (SAPS); Shimizugawa, M. Tatewaki & K. Takahashi 15642, Aug. 30, 1929 (SAPS). SIMUSHIR <16>. Simushir, M. Tatewaki & Y. Tokunaga 11864, Sep. 13, 1928 (SAPS). CHIRPOI <18a>. Peschanaya Bay, H. Takahashi 28554, Aug. 5, 2000 (SAPS). URUP <19>. Anama–Yoshinohama, K. Uchida, Jun. 17, 1891 (SAPS); Kobune, M. Tatewaki 9792, Aug. 26, 1927 (SAPS); Onsenzaki, M. Tatewaki 10059, Sep. 9, 1927 (SAPS); Tetyayeva Bay, H. Takahashi 22262, Aug. 21, 1996 (SAPS- 2 sheets); Tetyaeva Bay, H. Takahashi 28632, Aug. 8, 2000 (SAPS); Chernoburka Bay, M. Nakatani, Aug. 9, 2000 (SAPS).

SOUTH. ITURUP <20>. Moyoro Volcano, T. Ishikawa, Sep. 5, 1890 (SAPS); Peretarabets Mt., K. Jimbo, Jun. 1, 1891 (SAPS); Mt. Atoiya, T. Kawakami 289, Aug. 11, 1898 (SAPS); Mt. Chirippu, T. Kawakami 288, Aug. 19, 1898 (SAPS); Moyoro, Chishima-chosasyo, Sep. 18, [no year; prob. 1939] (SAPS); [no locality], A. Abe, Jul. 25–Aug. 5, 1924 (TNS); Mt. Atoiya, K. Kondo 2189, Jul. 21, 1927 (TI- 2 sheets); Oyachi, S. Saito (6163), Aug. 11, 1928 (TNS, TI- 2 sheets); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Mt. Atosa, B. Yoshimura, Aug. 14, 1939 (SAPS). KUNASHIR <21>. Mt. Chacha, T. Ishikawa, Jul. 21, 1894 (SAPS- 2 sheets); Mt. Chacha, M. Nagai & M. Shirahama, Jul. 26, 1929 (SAPS- 2 sheets); Mt. Chacha-nupuri, Y. Okada, Aug. 3 , 1929 (TNS 386965); [no locality], [no collector's name], 1935 (KYO).

11. Harrimanella stelleriana (Pall.) Coville [Jimukade]
<THE KURILS>

NORTH. SHUMSHU <02>. Mt. Tenzin-yama, J. Ohwi (& R. Yoshii) 5620, Jul. 28, 1934 (TNS, KYO). PARAMUSHIR <03>. Hiratazaki, Y. Kudo 5391, Jul. 21, 1920 (SAPS); Mt. Murakami-dake, K. Kojima 1451, Jul. 26, 1932 (TNS); Kashiwabara-wan, J. Ohwi & R. Yoshii 5973, Aug. 2, 1934 (KYO); Volcano Ebeko, V. Y. Barkalov 97039 [9739 incorrect], Jul. 14, 1997 (SAPS- 2 sheets); NW of Severo-Kurilsk, H. Takahashi 23170, Aug. 5, 1997 (SAPS).

MIDDLE. RASSHUA <13>. Sonrakuwan, M. Tatewaki & K. Takahashi 15266, Aug. 8, 1929 (SAPS); Chotozan, M. Tatewaki & K. Takahashi 15329, Aug. 10, 1929 (SAPS). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15317, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15335, Aug. 17, 1929 (SAPS).

SOUTH. ITURUP <20>. Minami-Chirippu, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS).

12. Ledum palustre L. sensu lato [Iso-tsutsuji sensu lato]
<SAKHALIN>

NORTH. Ado <04-upper l.>, Y. Kudo & B. Ishida 7514, Sep. 7, 1923 (SAPS); Mouth of River Tum' of the Gulf of Nadezhda <04-lower l.>, T. Fukuda 1872, Aug. 9, 2001 (SAPS); SE of the Cape of Maria, Lake Monchigar <04-upper r.>, T. Fukuda 1689, Aug. 6, 2001 (SAPS); Near Pilewo, Larix forests < 04-lower r.>, Y. Kudo & B. Ishida 7097, Aug. 25, 1923 (SAPS- 2 sheets); Pomeri–Moskarivo, Takada-shokai, on the peat <06-lower r.>, Y. Kudo & B. Ishida 7335 & 7336, Aug. 31, 1923 (SAPS- 2 sheets); N of Moakal'vo, around Lake Bol'shoye <06-lower r.>, V. Y. Barkalov 10647, Aug. 13, 2001 (SAPS); Pirituk,

dry peak <07-upper l.>, Y. Kudo & B. Ishida 7146, Aug. 28, 1923 (SAPS); Oha <7-lower r.>, Okada, Sep. 5, 1923 (TI); 15km S of Okha <10-upper r.>, H. Takahashi 31176, Jul. 28, 2003 (SAPS); East coast, east of the Gulf of Piltun, Vstrechnay <11-upper l.>, T. Fukuda 1575, Aug. 4, 2001 (SAPS); Lake Pilitu <15-lower l.>, T. Fukuda 2252, Aug. 18, 2001 (SAPS); East Coast, Nuto–Chaiwo <19-upper l.>, T. Ishikawa, Jul. 6, 1912 (SAPS- 2 sheets); Seacoast of Chaio <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6465, Aug. 12, 1922 (SAPS); Nyiwo, in aremosis litoralibus <23-lower l.>, Y. Kudo & M. Tatewaki no number, 6511, 6512 & 6511', Aug. 13, 1922 (SAPS- 4 sheets); Nyiwo Ins. Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6550, Aug. 14, 1922 (SAPS); Pupuni, in humidis <26-lower l.>, Y. Kudo & M. Tatewaki 1367, Aug. 8, 1922 (SAPS- 2 sheets); Parukata <26-upper r.>, Y. Kudo & M. Tatewaki, Aug. 10, 1922 (SAPS); Parukata, tundra <26-upper r.>, Y. Kudo & M. Tatewaki 6428 & 6429, Aug. 10, 1922 (SAPS-2 sheets); Parukata, in sylvis <26-upper r.>, Y. Kudo & M. Tatewaki 6451, Aug. 10, 1922 (SAPS); Palkata <26-upper r.>, Okada, Aug. 26, 1923 (TI).

MIDDLE. Adatuim <29-upper l.>, Okada, Aug. 23, 1923 (TI); Luekoff <33-upper r.>, Y. Kudo & M. Tatewaki 6300, Aug. 4, 1922 (SAPS); Nabilskiy Mts., Mt. Changa <34-upper r.>, N. Fujii 01152, Aug. 7, 2002 (MAK 343111); 40km E of Palevo, Mt. Changa <34-upper r.>, H. Takahashi 30330, Aug. 7, 2002 (SAPS); NW of Pogranichnoye, S banks of the Langeri River <35-lower r.>, N. Fujii 01297, Aug. 11, 2002 (MAK 346152); West of Pilewo <36-lower l.>, K. Jimbo, Aug. 13, 1907 (TNS 53548); Hinan-ekisha–Aobaeki <36-lower l.>, Y. Kudo & M. Tatewaki, Jul. 30, 1922 (SAPS); Anbetsu, in the forest < 36-lower l.>, T. Ishiyama, Jul. 16, 1927 (SAPS); Anbetsu, Ooiwa-toge <36-lower l.>, Y. Tokunaga & K. Kawai, Sep. 2, 1929 (SAPS); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS- 3 sheets); Poronai-mura <37-lower r.>, T. Miyake, Aug. 29, 1906 (SAPS); Handa <37-lower r.>, S. Sugawara 17572, Aug. 10, 1931 (SAPT); Vicinity of R. Jobboroit <37-lower r. to 43>, T. Miyake, Aug. 30, 1906 (SAPS); Higashiyama <38-lower l.>, T. Miyake, Aug. 28, 1906 (SAPS- 2 sheets); Hayabusayama <38-lower l.>, T. Miyake, Aug. 28, 1906 (SAPS); 80km N of Poronaysk, Mirnyy–Pervomayskoye <38-lower l.>, H. Takahashi 30475, 30476, 30478, 30482 & 30484, Aug. 10, 2002 (SAPS- 5 sheets); 20km NE of Smirnykh, banks of the Poronay RAA Mirnyy <38-lower l.>, N. Fujii 01280, Aug. 10, 2002 (MAK 346153); Shisuka-shicho, Mt. Sekkai-yama (60, 61-rinpan) <39-lower l.>, B. Yoshimura & M. Hara, Jul. 15, 1937 (SAPS); Shisuka-shicho, Chirie-gun, Akaigawa <39-lower r.>, M. Tatewaki & Y. Takahashi 23110, Jun. 25, 1936 (SAPS); Shisuka-shicho, Asase <40-lower l.>, Y. Hoshino et al., Aug. 11, 1933 (SAPS- 2 sheets); Shisuka, Ennai-kokkyo <40-lower l.>, S. Sugawara no number & 17514, Aug. 5, 1935 (SAPS, SAPT); Shisuka-shicho, Chirie-gun, Mirukunai <40-lower r.>, M. Tatewaki & Y. Takahashi 22500, Jun. 15, 1936 (SAPS); Upstream of Hoe River, tundra <42-lower l.>, [no collector's name], Aug. 13, 1929 (KYO); Keton <42-upper r.>, S. Sugawara 17597 & 17599, Aug. 8, 1931 (SAPT- 2 sheet); Hoe-mura, Mt. Mimizuku-yama <42-lower r.>, [no collector's name], Aug. 10, 1929 (KYO); Hoe <42-lower r.>, S. Sugawara 17598 & 17522, Aug. 10, 1931 (SAPT- 2 sheets); Mt. Shotoi-dake <42-lower r.?>, S. Sugawara 17593, Aug. 24, 1931 (SAPT); Horoto <42-lower r.>, S. Sugawara 17595-2 & 17600, Aug. 25, 1931 (SAPT- 2 sheets); Mt. Horoto-dake <42-lower r.>, S. Sugawara 17594, Aug. 25, 1931 (SAPT); Mt. Horoto-dake <42-lower r.>, S. Sugawara, Aug. 5, 1932 (KYO); Hoe <42-lower r.>, S. Sugawara, Aug. 6, 1932 (KYO); Mt. Horoto-yama <42-lower r.>, Z. Tashiro, Sep. 3, 1939 (KYO); Vicinity of R. Wuruna <43->, T. Miyake, Aug. 22, 1906 (SAPS); Horonai, tundra <43 to 44, 48 to 49>, S. Sugawara 17556, 17532, 17533 & 17234, Aug. 12, 1927 (SAPT- 4 sheets); Borodo <43-lower l.>, T. Miyake, Sep. 1, 1909 (SAPS); Shisuka-shicho, Nimenjo–Yamahana <44-lower l.>, B. Yoshimura & M. Hara Jul. 11, 1937 (SAPS); Shisuka-shicho, Chirie-gun, Naruko-Nirayama <45-upper r.?>, M. Tatewaki & Y. Takahashi 22881, Jun. 26, 1936 (SAPS); Shikka Distr., R. Atsunai <45-upper r.>, Y. Hoshino & S. Sugiyama (Y. Hoshino et al.), Aug. 12, 1933 (SAPS- 6 sheets); Shisuka-shicho, Naruko River <45-upper r.>, Y. Hoshino et al., Aug. 13, 1933.08.13 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22720, Jun. 21, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 23006, Jun. 29, 1936 (SAPS); Esutoru, on tundra <46-lower l.>, S. Otagiri, Jul. 8, 1931 (SAPS); Mt. Shisuka-dake <47-upper l.>, S. Sugawara 17574, Jul. 10, 1934 (SAPT); Mt. Shisuka-dake <47-upper l.>, S. Sugawara 17561, 17585, 17586 & 17591, Jul. 16, 1934 (SAPT- 4 sheets); Kamishisuka <48-upper l.>, S. Sugawara 17575, 17578 & 17579, Jul. 4, 1934 (SAPT- 3 sheets); Poronayski–Leonidovo, moor <48-upper l.>, H. Takahashi 30534, 30545, Aug. 13, 2002 (SAPS- 2 sheets); E. Coast, Ehorokofunai <48-lower l.>, T. Miyake, Aug. 11, 1906 (SAPS- 2 sheets); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS); Naikawa (near Nairo) <48-lower l.>, S. Sugawara no number, 17570, 17571 & 17573, Jun. 20, 1928 (SAPS, SAPT- 3 sheets); Kusunokiyama, Experiment Forest of Kyoto Univ. <48-lower l.>, Y. Kobayashi, Jul. 25, 1928 (TNS); Nairo <48-lower l.>, S. Sugawara 17529, 17530, 17562, 17564 & 17565, Aug. 6, 1931 (SAPT- 5 sheets); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS, TNS); Telpenia Bay, Shikka <48-upper r.>, T. Miyake Aug. 12, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Satsukari, near Shisuka <48-upper r.>, I. Namikawa, Aug. 8, 1914 (SAPS); Satsukari, near Shisuka <48-upper r.>, I. Namikawa, Aug. 11, 1914 (SAPS- 2 sheets); Shisuka <48-upper r.>, S. Komatsu, Aug. 10, 1914 (TI); Siska <48-upper r.>, T. Sawada, Aug. 14, 1923 (TI); Shisuka <48-upper r.>, S. Sugawara, Jun. 20, 1927 (SAPS); Shisuka <48-upper r.>, S. Sugawara 17576 & 17577, Jun., 1928 (SAPT- 2 sheets); Shisuka, Experiment Forest of Kyoto Univ. <48-upper r.>, T. Chono, Jul. 28, 1928 (TNS); Shisuka <48-upper r.>, S. Sugawara 17539, Jul. 2, 1929 (SAPT); Shisuka <48-upper r.>, H. Ohtani & Y. Imai, Jul. 19, 1930 (SAPS- 2 sheets); Shisuka <48-upper r.>, G. Koidzumi, Aug. 19, 1930 (KYO); Shisuka, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Near Shisuka <48-upper r.>, B. Yoshimura & M. Hara, Jul. 9, 1937 (SAPS- 2 sheets); Shisuka-cho, Otasuno-mori <48-upper r.>, R. Imaseki, Jul. 16, 1941 (TNS); Shisuka, Horonai-gawa, near Amiba <48-upper r.>, R. Imaseki, Jul. 17, 1941 (TNS); Shiska <48-upper r.>, S. Kitamura, Jul. 29, 1942 (KYO); Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Horonai River, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Telpenia

Bay, Taraika <49-upper l.>, T. Miyake, Aug. 13, 1906 (SAPS); Arakuri <49-upper l.>, S. Sugawara 17550 & 17551, Jun. 19, 1935 (SAPT- 2 sheets); Shisuka-shicho, Nishitaraika wetland <49-upper l.>, M. Kawashima, Jul. 7, 1935 (SAPS); Shisuka-gun, by Lake Taraika <49-upper l.>, B. Yoshimura & M. Hara 22, Jul. 10, 1937 (TNS); Taraika <49-upper r.>, T. Miyake, Aug. 14, 1906 (SAPS); Taraika <49-upper r.>, S. Sugawara 17559, Aug. 9, 1927 (SAPT); Shisuka-shicho, Taraika–Nimenjo <49-upper r.>, B. Yoshimura & M. Hara no number & 21, Jul. 10, 1937 (SAPS- 4 sheets, TNS); Rukutama <49-upper r.>, S. Sugawara 17557 & 17558, Jul. 7, 1938 (SAPT- 2 sheets); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1940 (TI- 2 sheets); Jimutaki <50-upper r.>, K. Miyabe & T. Miyagi, Jul. 24, 1906 (SAPS); Shikka Distr., Nokoro <50-upper r.>, Y. Hoshino & S. Sugiyama, Aug. 17, 1933 (SAPS); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS- 2 sheets); Shisuka-shicho, Nokoro <50-upper r.>, S. Sugawara 29638 & 17596, Jul. 31, 1935 (SAPS, SAPT); Shisuka-shicho, Nokoro <50-upper r.>, M. Kawashima, Aug. 12, 1935 (SAPS); Shisuka, Nokoro <50-upper r.>, S. Sugawara, Aug. 14, 1935 (SAPS); Kitashiretoko [Peninsula?] <51 to 55>, S. Sugawara 17553, Jul. 25, 1935 (SAPT); Shisuka-shicho, Noto <51-lower l.>, Y. Hoshino et al., Jul. 12, 1933 (SAPS- 3 sheets); Shikka Distr., Noto <51-lower l.>, Y. Hoshino et al., Jul. 27, 1933 (SAPS- 2 sheets); Kitashiretoko Peninsula, Naihuto <51-lower l.>, Y. Hoshino et al., Jul. 30, 1933 (SAPS); Shisuka, Kitashiretoko, Mt. Kasyoku-yama <51-lower l.>, S. Sugawara 17540, 17552, 26669, 26674 & 26679, Jul. 22, 1935 (SAPS- 3 sheets, SAPT- 2 sheets); Lake Solenuiya <51-lower r.>, K. Miyake & T. Miyagi, Jul. 26, 1906 (SAPS- 2 sheets); Kitashiretoko Peninsula, Nushike <51-lower r.>, Y. Hoshino et al., Jul. 21, 1933 (SAPS); Shikka Distr., Funakoshi <51-lower r.>, Y. Hoshino & S. Sugiyama, Jul. 24, 1933 (SAPS- 2 sheets); Shikka Distr., Funakoshi <51-lower r.>, Y. Hoshino et al., Jul. 25, 1933 (SAPS); Shisuka, Nushike <51-lower r.>, S. Sugawara 26996 & 26997, Jul. 24, 1935 (SAPS- 2 sheets); Kitashiretoko Peninsula, Mt. Hokke-yama <51-lower r.>, S. Sugawara 17540-2, Jul. 27, 1935 (SAPT); Naikotoru <52-upper l.>, T. Miyake, Aug. 29, 1907 (TNS); Mt. Isara-yama <52-lower l.>, S. Sugawara 17589, Jul. 17, 1933 (SAPT); Mt. Kotan-dake <52-lower l.>, S. Sugawara 17595, Jul. 19, 1933 (SAPT); Mt. Isara-yama <52-lower l.>, S. Sugawara 17555, 17590 & 17592, Aug. 17, 1933 (SAPT- 3 sheets); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 30, 1907 (SAPS); Mt. Kamabuse-yama <52-lower r.>, S. Sugawara 17554, 17585 & 17587, Aug. 7, 1934 (SAPT- 3 sheets); W.Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 31, 1907 (SAPS); E. Coast, Ponkotan <54->, T. Miyake, Sep. 13, 1906 (SAPS); E. Coast, Kotankeshi <54-upper r.>, T. Miyake, Sep. 12, 1906 (SAPS); Kitashiretoko Peninsula, Yoman–Rosoku-iwa <55-upper r.>, Y. Hoshino et al., Jul. 21, 1933 (SAPS); Kitashiretoko Peninsula, Harato-misaki–Futatsu-iwa <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS); Kitashiretoko Peninsula, Futatsu-iwa <55-lower r.>, Y. Hoshino, Jul. 20, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS- 2 sheets); Shisuka-shicho, Kitashiretoko-misaki <55-lower r.>, S. Sugawara 27130 & 27131, Jul. 25, 1935 (SAPS- 2 sheets).

SOUTH. Shikka Distr., Otasu <56-upper r.>, Y. Hoshino et al., Jul. 8, 1933 (SAPS); E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS); Maguntan <57-lower l.>, S. Sugawara 17535 & 17536, Jul. 20, 1920 (SAPT- 2 sheets); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 20, 1927 (SAPS); Mt. Tosso <57-lower l.>, N. Hiratsuka et al. 20 & 21, Jul. 23, 1927 (TI- 2 sheets, SAPS); Maguntan <57-lower l.>, S. Sugawara 17568, 17569 & 17549, Jul. 10, 1928 (SAPT- 3 sheets); Mt. Tosso-zan <57-lower l.>, S. Sugawara 17563, Jun. 13, 1929 (SAPT); Mt. Nupuripo <57-lower l.>, S. Saito no number & 358, Aug. 3, 1929 (TI- 4 sheets); Maguntan <57-lower l.>, S. Sugawara, Jul. 2, 1930 (SAPS); Maguntan <57-lower l.>, S. Sugawara 17512, Jun. 5, 1931 (SAPT); Mt. Tosso-zan <57-lower l.>, H. Hara, Aug. 5, 1931 (TI- 2 sheets); Mt. Tosso-zan <57-lower l.>, S. Sugawara 17560, Sep. 20, 1931 (SAPT); Mt. Tosso-zan <57-lower l.>, [no collector's name], 1932 (MAK 81405); Hoyori-mura, Maguntan <57-lower l.>, H. Sase, Aug. 13, 1936 (SAPS); Maguntan <57-lower l.>, S. Sugawara 17517, Aug. 21, 1936 (SAPT); Maguntan, near Deikazan <57-lower l.>, G. Koidzumi, Aug. 9, 1940 (KYO); Mt. Tosso-zan <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI- 3 sheets); Pugacheva (Maguntan), dry meadow <57-lower l.>, H. Takahashi & A. Taran 27869, Jul. 17, 2000 (SAPS); Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29581, Aug. 2, 2001 (SAPS); Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29648, Aug. 2, 2001 (SAPS); 80km N of Dolinsk, Mt. Zhdanko <57-lower l.>, H. Takahashi 30155, Aug. 2, 2002 (SAPS); 80km N of Dolinsk, Mt. Zhdanko <57-lower l.>, N. Fujii 01091, Aug. 2, 2002 (MAK 340820); Mt. Kashipo <57-upper r.>, N. Hiratsuka, Aug. 7, 1928 (SAPS); Mt. Kashipo-dake <57-upper r.>, S. Sugawara 17584, Aug. 27, 1929 (SAPT); Kashipo, Kashipo-dake <57-upper r.>, H. Abumiya et al., Jul. 22, 1932 (SAPS); Kashipo, Nakanodake <57-upper r.>, H. Abumiya et al., Jul. 27, 1932 (SAPS); Kashipo, Shokuminchi <57-upper r.>, H. Abumiya et al., Aug. 8, 1932 (SAPS); Kashipo <57-upper r.>, M. Sato, Jul. 30, 1933 (TI); W. Coast, Kusunnai <58-upper r.>, T. Miyake, Jul. 7, 1906 (SAPS, TNS); Kusunnai <58-upper r.>, K. Miyabe & T. Miyagi, Aug. 9, 1906 (SAPS); E. Coast, Kusunnai <58-upper r.>, T. Miyake, Sep. 21, 1906 (SAPS); Kushunnai <58-upper r.>, S. Sugawara 17515 & 17520, Jun. 20, 1934 (SAPT- 2 sheets); Kushunnai <58-upper r.>, S. Sugawara 17521, Jun. 20, 1935 (SAPT); E. Coast, Shiraraka <59-upper l.>, T. Miyake, Sep. 20, 1907 (SAPS, TNS); Manui <59-upper l.>, S. Komatsu, Aug. 3, 1913 (TI); Manui <59-upper l.>, S. Sugawara 17519, Jun. 21, 1934 (SAPT); Odasamu <59-lower l.>, S. Otagiri, Jul. 1, 1930 (KYO); Aihama-mura, Experiment Forest of Tokyo Univ. <61-upper r.>, R. Imaseki, Jul. 12, 1941 (TNS); Dubki <62-upper l.>, K. Miyabe & T. Miyagi, Jul. 22, 1906 (SAPS); Naibuchi <62-upper l.>, T. Miyake, Sep. 26, 1906 (TNS); Sakaehama <62-upper l.>, G. Koidzumi, Aug. 13, 1930 (KYO); Sakaehama <62-upper l.>, S. Sugawara 17531, Jul. 6, 1931 (SAPT); Sakaehama <62-upper l.>, Herb. Dr. T. Ito, [no date], (TNS- 3 sheets); 8 Km N of Dolinsk, Nayba River <62-upper l.>, H. Takahashi 29315, Jul. 23, 2001 (SAPS- 2 sheets); Bogs of Sokol <62-lower l.>, T. Fukuda 1108, Jul. 20, 2001 (SAPS); 6km W of Sokol town, Mal Takoy River <62-lower l.>, H. Takahashi 29178, Jul. 20, 2001 (SAPS); W. Coast, Teiya <63-upper r.>, T. Miyake, Jul. 4, 1906 (SAPS); Rutaka <64-lower r.>, S. Sugawara 17566, Aug. 4, 1928 (SAPT); Vladimirohuka <65-upper l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Toloetsukoe <65-upper

l.>, T. Miyake, Sep. 29, 1906 (SAPS, TNS); Dalni <65-upper l.>, T. Miyake, Sep. 29, 1906 (SAPS); Konuma <65-upper l.>, S. Sugawara 17513, Jul. 4, 1921 (SAPT); Konuma <65-upper l.>, G. Koidzumi, Aug. 11, 1930 (KYO); Konuma <65-upper l.>, H. Sasa, Jul. 22, 1937 (TNS); Susuya <65-upper l.>, S. Sugawara 17511, Jul. 10, 1928 (SAPT); Suzuya <65-upper l.>, [no collector's name], 1932 (MAK 101398); Tamagawa <65-upper l.>, S. Sugawara 17509 & 17518, Jul. 4, 1935 (SAPT- 2 sheets); Kitatoyohara <65-upper l.>, S. Sugawara 17516, Sep. 8, 1940 (SAPT); Toyohara <65-upper l.>, S. Otagiri, Jul. 2, 1931 (SAPS- 9 sheets); Toyohara <65-upper l.>, S. Otagiri, Jul. 23, 1931 (SAPS- 3 sheets); Toyohara <65-upper l.>, S. Kitamura, Aug. 7, 1940 (KYO); Toyohara <65-upper l.>, S. Kitamura, Jul. 10, 1942 (KYO); Juzhno-Sachalinskaja (Sussunajskaja) <65-upper l.>, K. Stepanova & I. Parschina, Jun. 15, 1952 (TNS); Juzhno-Sachalinskaja (Sussunajskaja) <65-upper l.>, L. Motorina, Jun. 26, 1952 (TNS); Aniva distr., near Novo-Alexandrovsk <65-upper l.>, G. Proskuriakova & G. Porobinovskaia, Sep. 7, 1973 (SAPT, TI 1323360); Torechapaachi <65-lower l.>, G. Nakahara, Jun. 24, 1906 (TNS); Mitsuriohuka <65-lower l.>, K. Miyake & T. Miyagi, Aug. 22, 1906 (SAPS); Mitsuryofka <65-lower l.>, U. Faurie, Jul., 1908 (KYO); Kaizuka <65-lower l.>, S. Sugawara 17510, Jun. 7, 1930 (SAPT); Kaizuka <65-lower l.>, S. Sugawara 17523 & 17524, Sep. 10, 1930 (SAPT- 2 sheets); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 31, 1907 (SAPS); Chekhovskiy Pass–Mt. Chekhova <65-upper r.>, H. Takahashi 29288 & 29291, Jul. 22, 2001 (SAPS- 2 sheets); Peak Chekhov <65-upper r.>, T. Fukuda 1180, Jul. 22, 2001 (SAPS); S of Okhotskoye <66-lower l.>, H. Takahashi 27893, Jul. 19, 2000 (SAPS); S of Okhotskoye <66-lower l.>, H. Takahashi 27926, Jul. 19, 2000 (SAPS); NE of Lake Tunaycha, NE of Lake Khvalisekoye <66-lower r.>, T. Fukuda 1376, Jul. 29, 2001 (SAPS- 2 sheets); N side of Tunaycha Lake <66-lower r.>, H. Takahashi 29514, Jul. 29, 2001 (SAPS- 3 sheets); Uryu <69-upper r.>, S. Sugawara 17537 & 17538, Jul. 3, 1935 (SAPT- 2 sheets); Near Korsakof <70-upper r.>, S. Takeo, Sep., 1905 (SAPS- 2 sheets); Korsakof <70-upper r.>, T. Minami & Kanno, Nov., 1905 (SAPS- 2 sheets); Aniwa Bay, Korssakoff <70-upper r.>, T. Miyake, Jun. 19, 1906 (SAPS); Korssakoff <70-upper r.>, K. Miyabe & T. Miyagi, Jul. 12, 1906 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, T. Miyake, Jul. 10, 1907 (SAPS); Ohtomari <70-upper r.>, K. Numajiri, Jun., 1924 (TNS); Ohtomari <70-upper r.>, S. Sugawara 17567, Jun. 5, 1929 (SAPT); Nagahama <71-upper r.>, S. Sugawara, Jul. 20, 1929 (SAPS); Nannichi-gawa River <71-upper r.>, S. Sugawara 17546 & 17548, Jun. 20, 1935 (SAPT- 2 sheets); Arakuri <71-upper r.>, S. Sugawara 17547, Jun. 20, 1935 (SAPT); Nagahama-gun, Tobuchi-mura, near Ponto <71-upper r.>, H. Sase, Jul. 24, 1936 (SAPS); Nagahama-gun, Tobuchi-mura, Ponto mire <71-upper r.>, H. Sase, Aug. 15, 1937 (SAPS- 2 sheets); 8km SE of Ozerskiy, Arakul River <71-upper r.>, H. Takahashi 30623, Aug. 15, 2002 (SAPS); 45km E of Korsakov, 2km E of Beregovoy <72-upper l.>, H. Takahashi 30660 & 30665, Aug. 16, 2002 (SAPS- 2 sheets); Mt. Shiretoko Juzozan <74-upper l.>, T. Miyake, Jul. 11, 1908 (SAPS).

[Locality Uncertain]. Komatu, 1909 (TI- 6 sheets); Western coast, [no collector's name], Aug., 1922 [?] (MAK 75171); Ochiishi [?], S. Sugawara 17541, Jul. 10, 1935 (SAPT); Z. Tashiro, Aug.–Sep., 1939 (KYO); T. Iishiba, [no date] (TI).

<THE KURILS>

NORTH. SHUMSHU <02>. Tenzin-yama, J. Ohwi (& R. Yoshii) 5652, Jul. 28, 1934 (SAPS, KYO). PARAMUSHIR <03>. [no locality], S. Yokoyama, 1908 (SAPS- 2 sheets) ; [no locality], Y. Yasuhara, Aug., 1923 (KYO); Raisha, J. Ohwi & R. Yoshii 5994, Aug. 6, 1934 (KYO); Vasil'yeva Bay, H. Takahashi 28065, Jul. 25, 2000 (SAPS).

MIDDLE. CHIRPOI <18>. Peschanaya Bay, H. Takahashi 19894, Aug. 23, 1995 (SAPS- 2 sheets); Peschanaya Bay, H. Takahashi 28539, 28556 & 28561, Aug. 5, 2000 (SAPS- 3 sheets). URUP <19>. Anama–Yoshinohama, highland, K. Uchida, Jun. 17, 1891 (SAPS, TI); Afunruimoi, K. Uchida, Jun. 25, 1891 (SAPS); Yoshinohama, K. Jimbo, Jun. 18, 1891 (SAPS- 2 sheets); Anama, K. Jimbo, Jun. 18, 1891 (SAPS); Onsenzaki, K. Jimbo, Jul., 1891 (SAPS, TI); Iyema, I. Kodama, May, 1893 (SAPS); Kobune, *Betula* forests. M. Tatewaki 9834, Aug. 26, 1927 (SAPS); Kobune, bog, M. Tatewaki 9820, Aug. 26, 1927 (SAPS); Kobune, M. Tatewaki 9842, Aug. 26, 1927 (SAPS); Daiba-hama, M. Tatewaki 9894, Sep. 1, 1927 (SAPS); Onsenzaki, M. Tatewaki, Sep. 7, 1927 (SAPS); Tokotan, M. Tatewaki 10099, Sep. 13, 1927 (SAPS); NE of Van-Der-Lind, M. Ohara, Aug. 26, 1995 (SAPS); NE of Van-Der-Lind, H. Takahashi 20062, Aug. 26, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20091, Aug. 28, 1995 (SAPS); Ukromnaya Bay, H. Takahashi 22200, Aug. 20, 1996 (SAPS- 2 sheets); Tetyaeva Bay, H. Takahashi 22266, Aug. 21, 1996 (SAPS- 2 sheets); Tetyaeva Bay, H. Takahashi 28618, Aug. 8, 2000 (SAPS).

SOUTH. ITURUP <20>. Moyoro Volcano, T. Ishikawa, Sep. 5, 1890 (SAPS); Moyoro-yama, S. Yokoyama, Jul. 27, 1893 (SAPS); Mt. Moyoro, K. Fukuzawa, Aug. 27, 1893 (SAPS- 3 sheets); Mt. Moyoro, T. Kawakami 99, Aug. 12, 1898 (SAPS); Teinei, T. Kawakami no number & 289, Aug. 28, 1898 (SAPS); Moyoro, Mt. Iwo, M. Aizawa, Jul. 4, 1900 (SAPS); Bettobu–Shamanbe, K. Miura , Jul. 13-14, 1906 (SAPS); Shibetoro, K. Miura, Jul. 21, 1906 (SAPS); Moyoro Coast, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Shana–Bettobi, K. Kondo 1957, Jul. 13, 1927 (TI- 2 sheets); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI- 3 sheets); Oyachi, S. Saito, Aug. 11, 1928 (TI); Bettobi–Shana, S. Saito, Aug. 18, 1928 (TI- 2 sheets); Shana–Sashiusu, S. Saito, Aug. 20, 1928 (TI); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Mt. Moyoro, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS); Tannemoe, Chishima-chosasyo, Aug. 30, [no year; prob. 1939] (SAPS); Shana vill., near wetland of Yanketou, T. Azuma et al. 3301, Jun. 24, 2002 (SAPT). KUNASHIR <21>. Atosanobori, D. Hashimoto, Jul. 15, 1890 (SAPS- 2 sheets); Rausu Sulphar, K. Jimbo, Aug. 16, 1890 (SAPS); Shumanobori, S. Yokoyama, Jun. 12, 1891 (SAPS); Ichibishinai, C. Endo, Jul. 27, 1894 (SAPS); Mt. Tomari, Y. Tanaka, Sep. 11, 1895 (SAPS); Znbekotan, H. Tanaka, [no date; 1895?] (SAPS); Furukamapp, M. Tatewaki 3407, Jul. 26, 1923 (SAPS); Mt. Rausu, M. Tatewaki 3690, Jul. 23, 1923 (SAPS); Mt. Rausu, M. Tatewaki 3265, Jul. 23, 1923 (SAPS- 2 sheets, SAPT); Furukamapp, J. Ohwi, Sep. 3, 1923 (TNS); Tomari, H. Ohtani, Aug. 9, 1929 (SAPS); Furukamapp–Nikishiro, Y. Matsumura, Jul. 20, 1930 (KYO); [no locality], [no collector's name], 1935 (KYO); Mt. Chacha, K. Ito, Aug., 1939 (SAPS); Mt. Rausu, K. Ito, Sep. 22, 1939 (SAPS). SHIKOTAN <22>. Shakotan, T. Kawakami 511, Aug. 1, 1898 (SAPS); Shakotan,

K. Miura, Jul. 26, 1906 (SAPS); (Around) Shakotan, [no collector's name] (H. Takeda), Jul. 16, 1909 (SAPS- 2 sheets); Anama, Arai, Sep. 24, 1909 (TNS); [no locality], A. Abe, Jul. 17, 1924 (TNS); Mt. Shakotan, S. Saito, Aug. 30, 1924 (TI); Mt. Shakotan, S. Saito 3301, Sep., 1925 (TI); Shakotan, S. Saito 2324, Sep. 2, 1925 (TI); Shakotan–Horobetsu, S. Saito, Sep. 4, 1925 (TI); [no locality], A. Abe, Aug. 11, 1927 (TI); [no locality], K. Kondo, Aug. 11, 1927 (TI); [no locality], K. Kondo no number & 7835, Aug. 11, 1927 (TI- 2 sheets); Chiboi, K. Kondo, Aug. 10, 1929 (TI- 2 sheets); Horobetsu–Okkaibetsu, K. Kondo, Aug. 31, 1929 (TI); Kekkyowan, K. Kondo, Sep. 5, 1929 (TI); Shakotan, S. T. Ono 46, Jun. 29, 1930 (TI); Shakotan, J. Ohwi, Jul. 22, 1931 (KYO); Toiro, M. Tatewaki 20572, Jun. 20, 1934 (SAPS); Odatomi, M. Tatewaki 20573, Jun. 20, 1934 (SAPS); Shikotan-Matsuhara, D. Akaishi 20884, Jun. 29, 1934 (SAPS).

13. Leucothoe grayana Maxim. [Hanahirinoki]
<SAKHALIN>

SOUTH. Mt. Omanbetsu <72-lower l.>, T. Miyake, Jul. 15, 1908 (SAPS); Memanbetsu [error for Omanbetsu?] <72-lower l.?>, S. Sugawara 17466, Sep., 1931 (SAPT).
< THE KURILS>

SOUTH. ITURUP <20>. Shana–Sashiusu, S. Saito, Aug. 20-22, 1928 (TI- 2 sheets). KUNASHIR <21>. Ichibishinai-shindo, H. Yokoyama, Jun. 6, 1891 (SAPS); Furukamapp, C. Endo, Sep. 16, 1894 (SAPS); Mt. Tomari, Y. Tanaka, Sep. 11, 1895 (SAPS); Furukamapp, M. Tatewaki 3324, Jul. 25, 1923 (SAPS, SAPT); Mt. Rausu, H. Ishikawa, Aug. 1, 1923 (SAPS); Atoiya, M. Nagai & M. Shimamura, Aug. 3, 1929 (SAPS); Furukamapp, Y. Matsumura, Jul. 20, 1930 (KYO); Mt. Tomari, M. Tatewaki no number & 25512, Aug. 20, 1936 (SAPS- 2 sheets). SHIKOTAN <22>. Shakotan, K. Miyabe, Jul. 27, 1884 (SAPS); Shakotan, K. Miura, Jul. 26, 1906 (SAPS); Around Shakotan, [no collector's name; prob. H. Takeda], Jul. 16, 1909 (SAPS); Shakotan, G. Tanaka & Ken. Miyabe, Aug. 4, 1910 (SAPS); Mt. Shakotan, S. Saito 1864, Aug. 30, 1925 (TI); Mt. Shakotan, S. Saito 1917 & 1918, Aug. 30, 1925 (TI- 3 sheets); Shakotan–Horobetsu, S. Saito, Sep. 4, 1925 (TI); Horobetsu, S. Saito 1397, Sep. 5, 1925 (TI); [no locality], K. Kondo 7836, Aug. 11, 1927 (TI- 3 sheets); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI- 2 sheets); Anama, K. Kondo, Aug. 28, 1929 (TI); Horobetsu–Okkaibetsu, K. Kondo, Aug. 31, 1929 (TI); Mt. Tomari, K. Kondo, Sep. 5, 1929 (TI); Matakotan, J. Ohwi, Jul. 19, 1931 (KYO); Kagenoma, J. Ohwi 543, Aug. 4, 1931 (TNS).

14. Loiseleuria procumbens (L.) Desv. [Minezuô]
<SAKHALIN>

NORTH. SE from the Cape of Maria, Lake Monchigar <04-upper r.>, T. Fukuda 1688, Aug. 6, 2001 (SAPS); 15km S of Okha <10-upper r.>, H. Takahashi 31188, Jul. 28, 2003 (SAPS); Seacoast of Chaio <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, in arenosis litoralibus <23-lower l.>, Y. Kudo & M. Tatewaki 6513, Aug. 13, 1922 (SAPS); Nyiwo, Ins Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6551, Aug. 14, 1922 (SAPS).

MIDDLE. Hantuza <37-lower r.>, Ezawa, Jul., 1923 (TI); Upstream of Hoe River <42-lower l.>, S. Sugawara 17612, Aug. 15, 1931 (SAPT); Mt. Horoto-yama <42-lower r.>, S. Sugahara 12, Jul. 1, 1934 (KYO); Shisuka <48-upper r.>, S. Sugawara 17615, Jul. 20, 1929 (SAPT); Siska <48-upper r.>, Nagamatsu, Jul. 15, 1930 (KYO); Shisuka, Rukutama <49-upper r.>, S. Sugawara no number & 17613, Aug. 16, 1935 (SAPS, SAPT); Chirie, behind the settlement <51-lower r.>, J. Ohwi, Aug. 1, 1932 (KYO); Mt. Kotan-yama <52-lower l.>, S. Sugawara 17614, Aug., 1934 (SAPT); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 31, 1907 (SAPS, TNS); Kitashiretoko Peninsula, Rosoku-iwa <55-upper l.>, Y. Hoshino et al., Jul. 22, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS); Kitashiretoko-misaki <55-lower r.>, S. Sugawara 17616, Jul. 26, 1935 (SAPT). Shisuka-shicho, Toyo[?]koro, tundra <?>, M. Kawashima, Jun. 3, 1935 (SAPS).

SOUTH. Lower place of Mt. Ochiho <65-upper r.>, S. Sugawara 17624-17626, Aug. 2, 1934 (SAPT- 3 sheets).
<THE KURILS>

NORTH. SHUMSHU <02>. [no locality], T. Ishikawa, Jun. 29, 1894 (SAPS- 2 sheets); [no locality], K. Endo, Jul. 3, 1903 (SAPS, TI); Daizingu, K. Endo, Jul. 20, 1903 (SAPS); Koseki-gawa–Shiroiwa, T. Ohashi, Aug. 28, 1932 (KYO- 2 sheets); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5651, Jul. 28, 1934 (KYO); Pochtareva Cape, H. Takahashi 23367, Aug. 8, 1997 (SAPS). PARAPUSHIR <03>. Musashi-wan, M. Aizawa, Jun. 22, 1900 (SAPS); Miyakawa-zaki, T. Matsubara, Aug. 7, 1917 (SAPS); Shiribachi, Y. Kudo 4906, Jun. 27, 1920 (SAPS); Nagaiwasaki, Y. Kudo 5134, Jul. 11, 1920 (SAPS); Nishikawa–Atenkeshi, Y. Kudo 5233, Jul. 13, 1920 (SAPS); Yotsuiwahana, Y. Kudo 5306, Jul. 14, 1920 (SAPS); Shirakawa, Y. Kudo 5605, Jul. 30, 1920 (SAPS); Tomarizaki, Y. Kudo 5782, Aug. 8, 1920 (SAPS); Urafuto-yama, Y. Kudo 5810, Aug. 8, 1920 (SAPS); Mt. Chai, Kamogawa, Jul. 27, 1930 (SAPS- 2 sheets); Chikura-dake, Y. Okada, Jul. 30, 1931 (TNS); Arakawa, Y. Okada, Aug. 10, 1931 (TNS); Mt. Murakami-dake, K. Kojima 1448, Jul. 26, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Mt. Yake-dake, Kojima, Aug. 5-7, 1932 (TNS); Murakami-wan, T. Ohashi, Aug. 11, 1932 (KYO- 2 sheets); Arakawa, J. Ohwi & R. Yoshii 151, Jul. 18, 1934 (KYO); Suribachi-wan, J. Ohwi & R. Yoshii 5381, Jul. 22, 1934 (KYO); Kashiwabara-wan, J. Ohwi (& R. Yoshii) 5967, Aug. 2, 1934 (KYO, SAPS, TI, TNS); Utesnyy River, H. Takahashi 20744, Aug. 1, 1996 (SAPS); Volcano Ebeko, V. Y. Barkalov 97044, Jul. 14, 1997 (SAPS); NW of Severo-Kurilsk, Y. Kuwahara 123, Aug. 5, 1997 (SAPS); NW of Severo-Kurilsk, H. Takahashi 23162, Aug. 5, 1997 (SAPS). [Island Uncertain; Shumshu or Paramushir], K. Fujita, 1944-45 (TNS).

MIDDLE. MAKANRUSHI <05>. M. Tatewaki 11217, Aug. 9, 1928 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11117, Aug. 8, 1928 (SAPS); [no locality], M. Tatewaki, Jun. 3, 1930 (TNS); Minamiura, M. Tatewaki 17318, Jun. 6, 1930 (SAPS); Nemo Bay, H. Takahashi 21237, Aug. 4, 1996 (SAPS); Mussel Bay–Kol'tsevoye Lake, H. Takahashi 21403, Aug. 7, 1996 (SAPS). KHARIMKOTAN <07>. Nishiura, M. Tatewaki 17214, May 28, 1930 (SAPS); [no locality], M. Tatewaki 17292, Jun. 4, 1930 (SAPS). SHIASHKOTAN <10>. Otomewan, M. Tatewaki 17342, Jun. 6, 1930 (SAPS). MATUA <12>. Ainu-wan, M. Tatewaki & Y. Tokunaga 12262, Sep. 6, 1928 (SAPS). RASSHUA <13>. Kotomari, M. Tatewaki & K. Takahashi 15070, Aug. 4, 1929 (SAPS); Sonraku-wan, M. Tatewaki & K. Takahashi 15021, Aug. 4, 1929 (SAPS); Minamikado, M. Tatewaki & K. Takahashi 14993, Aug. 4, 1929 (SAPS); Mt.

Choto, M. Tatewaki & K. Takahashi 15107, Aug. 5, 1929 (SAPS); Sonraku-wan, M. Tatewaki & K. Takahashi 15289, Aug. 9, 1929 (SAPS); Choto-zan, M. Tatewaki & K. Takahashi 15339, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19227 & 19231, Aug. 13, 1995 (SAPS- 2 sheets). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & K. Takahashi 15929, Sep. 14, 1929 (SAPS); SW side–central part, H. Takahashi 22971, Aug. 2, 1997 (SAPS). KETOI <15>. [no locality], M. Tatewaki & Y. Tokunaga 11477, Sep. 1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15191, Aug. 14, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15354, Aug. 17, 1929 (SAPS); Isozaki, M. Tatewaki & K. Takahashi 15556, Aug. 24, 1929 (SAPS); Nishiura, M. Tatewaki & K. Takahashi 15740, Sep. 4, 1929 (SAPS). SIMUSHIR <16>. Broton Bay, M. Tatewaki & Y. Tokunaga 11757, Aug. 15, 1928 (SAPS); Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11775, Aug. 16, 1928 (SAPS); Nakadomari, Nakayama, M. Tatewaki 11897, Aug. 17, 1928 (SAPS). URUP <19>. Suribachi-yama Volc., K. Jimbo, Jun. 16, 1891 (SAPS); Yoshinohama, K. Jimbo, Jun. 18, 1891 (SAPS); Terrace of Yoshinohama, K. Jimbo, Jun. 18, 1891 (TI).

SOUTH. ITURUP <20>. Peretarabetsu Volc., T. Ishikawa, Aug., 1890 (SAPS); Peretarabets Mt., K. Jimbo, Jun. 1, 1891 (SAPS, TI); Mt. Atoiya, T. Kawakami 195, Aug. 13, 1898 (SAPS); Mt. Moyoro, G. Tanaka & Ken. Miyabe, Jul. 17, 1910 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Mt. Atoiya, K. Kondo 2237, Jul. 21, 1927 (TI- 3 sheets); Oyachi, S. Saito, Aug. 11, 1928 (TI- 2 sheets); Shana–Sashiusu, S. Saito, Aug. 20-22, 1928 (TI); Mt. Hitokappu-yama, M. Koriba & R. Yoshii, Aug. 14, 1933 (KYO); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Mt. Moyoro, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS); Mt. Moyoro, Chishima-chosasyo, Sep. 15, 1939 (SAPS); Oyachi, Chishima-chosasyo, Sep. 15, [no year; prob. 1939] (SAPS). KUNASHIR <21>. Mt. Chacha, M. Nagai & M. Shimamura, Jul. 26, 1929 (SAPS- 2 sheets); Mt. Chacha, Y. Okada, Jul. 30, 1929 (TI); [no locality], [no collector's name], 1935 (KYO); Mt. Chacha, K. Ito, Aug., 1939 (SAPS).

15. Menziesia pentandra Maxim. [Koyôraku-tsutsuji]
<SAKHALIN>

SOUTH. Mt. Oyakochi <67-lower l.>, T. Miyake, Jun. 26, 1908 (SAPS); E. Coast, Kamuikeshi <67-lower l.>, T. Miyake, Jun. 29, 1908 (SAPS); Nakashiretoko, Airo <67-lower l.>, S. Sugawara 17635, Jun. 19, 1935 (SAPT); Mt. Ninushi <72-upper l.?>, T. Miyake, Jul. 2, 1908 (SAPS); E. Coast, Cheppopo <72-lower r.>, T. Miyake, Jul. 8, 1908 (SAPS); Mt. Shiretoko, Juzo-zan <74-upper l.>, T. Miyake, Jul. 2, 1908 (SAPS); Nakashiretoko, Mt. Jyuzo-zan <74-upper l.>, S. Sugawara 17631 & 17632, Sep. 20, 1931 (SAPT- 2 sheets); Nakashiretoko, Mt. Sankaku-yama <74-upper l.>, S. Sugawara 17633 & 17634, Jun. 20, 1935 (SAPT- 2 sheets).
<THE KURILS>

SOUTH. ITURUP <20>. Peretarabets Mt., K. Jimbo, Jun. 1, 1891 (SAPS); Mt. Atoiya, T. Kawakami 200, Aug. 11, 1898 (SAPS); Mt. Atosa, T. Kawakami 290, Sep. 5, 1898 (SAPS); Oyachi, S. Saito, Aug. 11, 1928 (TI- 4 sheets); Shana–Sashiusu, S. Saito, Aug. 20-22, 1928 (TI- 2 sheets); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Shana–Rubetsu, B. Yoshimura, Jul. 31, 1939 (SAPS); Shibetoro–Moyoro, Chishima-chosasho, Sep. 15, [no year; prob. 1939] (SAPS); Shibetoro vill., from mouth to middle of Shibetoro River, T. Azuma et al. 3077, Jun. 14, 2002 (SAPT). KUNASHIR <21>. Ichibishinai, C. Endo, Jul. 27, 1894 (SAPS); Seseki, M. Tatewaki 3004, Jul. 20, 1923 (SAPS); Mt. Rausu, M. Tatewaki 3267, Jul. 29, 1923 (SAPS, SAPT); Near River Onnebetsu, K. Kondo, Jul. 26, 1929 (TI- 2 sheets); Furukamapp–Nikishiro, Y. Matsumura, Jul. 21, 1930 (KYO- 2 sheets). SHIKOTAN <22>. [no locality], S. Ono (S. Sugawara Herb. 17636), Jul., 1928 (SAPT); Notoro–Shakotan, J. Ohwi (853), Aug. 12, 1931 (KYO, SAPS).

16. Phyllodoce aleutica (Spreng.) A.Heller [Aono-tsugazakura]
<THE KURILS>

NORTH. ATLASOVA <01>. Kitaura, S. Ito & G. Komori, Jul. 23, 1926 (SAPS); Minamiura, J. Ohwi & R. Yoshii 5842, Jul. 31, 1934 (KYO). SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); [no locality], K. Yendo, Jul. 20, 1903 (TI); On the hill, K. Endo, Aug. 18, 1903 (SAPS); Kataoka-wan, M. Tatewaki 17256, May 30, 1930 (SAPS); Bettobi, J. Owhi & R. Yoshii 30, Jul. 25, 1934 (KYO); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5641, Jul. 28, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23303, Aug. 8, 1997 (SAPS); Baikovo, H. Takahashi 27961, Jul. 24, 2000 (SAPS). PARAMUSHIR <03>. T. Yamazaki, Aug., 1926 (SAPS); Ottomai (Otmai), [no collector's name] (Tarao), Aug. 15, 1892 (MAK 81518, SAPS); Miyakawazaki, T. Sugihara, Aug. 7, 1917 (SAPS); Murakami-wan, Y. Kudo 4946, Jul. 3, 1920 (SAPS); Kashiwabara-wan, Y. Kudo 5060, Jul. 9, 1920 (SAPS); Magarikawa, Y. Kudo 5261, Jul. 13, 1920 (SAPS); Hiratazaki, Y. Kudo 5389, Jul. 21, 1920 (SAPS); Kashiwabara-wan, Y. Kudo 5516, Jul. 26, 1920 (SAPS); Urafuto-yama, Y. Kudo 5821, Aug. 8, 1920 (SAPS); [no locality], Y. Yasuhara, Aug., 1923 (KYO); Murakami-wan, M. Tatewaki 17244, May 29, 1930 (SAPS); Mt. Kanmuri-dake, K. Kojima, Jul. 25, 1932 (TNS); Mt. Hakuen-san, K. Kojima, Jul. 31, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Suribachi(-wan), J. Ohwi (& R. Yoshii) 5378, Jul. 22, 1934 (KYO, SAPS); Kashiwabara-wan, J. Ohwi & R. Yoshii 5986, Aug. 2, 1934 (KYO); Ustenyy River, near sandy beach, H. Takahashi 20720, Aug. 1, 1996 (SAPS); Ustenyy River, meadows near sandy beach, H. Takahashi 20745, 20754 & 20758, Aug. 1, 1996 (SAPS- 3 sheets); Ustenyy River, H. Takahashi 20857, Aug. 1, 1996 (SAPS); S of Savushkina Cape, H. Takahashi 23054, Aug. 4, 1997 (SAPS); Mt. Ebeko, Y. Kuwahara 122, Aug. 5, 1997 (SAPS); Mt. Ebeko, H. Takahashi 23183, Aug. 5, 1997 (SAPS); Utesnaya Bay, H. Takahashi 23626, Aug. 11, 1997 (SAPS). [Island Uncertain; Shumshu or Paramushir], Kataoka Bay, K. Fujita, 1944-45 (TNS).

MIDDLE. MAKANRUSHI <05>. Zakat Bay, H. Takahashi 24059, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11057, Aug. 8, 1928 (SAPS); Nemo, M. Tatewaki 11155, Aug. 9, 1928 (SAPS); Minamiura, M. Tatewaki 17324, Jun. 6, 1930 (SAPS); Nemo Bay, Y. Kuwahara, Aug. 4, 1996 (SAPS); Nemo Bay, H. Takahashi 21213, Aug. 4, 1996 (SAPS); Mussel Bay–Kol'tsevoye Lake, H. Takahashi 21398, Aug. 7, 1996 (SAPS). KHARIMKOTAN <07>. M. Tatewaki 17299, Jun. 4, 1930 (SAPS); Severgina Bay, H. Takahashi 21530, Aug. 8, 1996 (SAPS). SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21807, Aug. 12, 1996 (SAPS);

Zakatnaya Bay, H. Takahashi 21783, Aug. 12, 1996 (SAPS); Zakatnaya Bay, H. Takahashi 28260, Jul. 29, 2000 (SAPS). MATUA <12>. Dvoynaya Bay–Aynu Bay, H. Takahashi 22062, Aug. 15, 1996 (SAPS); Dvoynaya Bay–Aynu Bay, H. Takahashi 22083, Aug. 15, 1996 (SAPS). RASSHUA <13>. Mt. Chotozan, NW side, M. Tatewaki & K. Takahashi 15124, Aug. 5, 1929 (SAPS); Mt. Chotozan, S side, M. Tatewaki & K. Takahashi 15143, Aug. 5, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 15264, Aug. 8, 1929 (SAPS); Yoriki-hama–Lakes Beloye, H. Takahashi 19204, 19208 & 19212, Aug. 13, 1995 (SAPS- 3 sheets). KETOI <15>. Minamiura, M. Tatewaki & K. Takahashi 15794, Jul. 28, 1929 (SAPS); Kodakigawa, M. Tatewaki & K. Takahashi 15259, Aug. 15, 1929 (SAPS); Kodakigawa, M. Tatewaki & K. Takahashi 15303, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15344, Aug. 17, 1929 (SAPS); Shimizugawa, M. Tatewaki & K. Takahashi 15653, Aug. 30, 1929 (SAPS). SIMUSHIR <16>. Lake Midori, M. Tatewaki & Y. Tokunaga 11972, Aug. 18, 1928 (SAPS); Broton Bay, Wan-oku, M. Tatewaki & Y. Tokunaga 12011, Aug. 22, 1928 (SAPS); Simushir, M. Tatewaki & Y. Tokunaga 11863, Sep. 13, 1928 (SAPS); Simushir River, M. Tatewaki 17444, Jun. 9, 1930 (SAPS); Nakatomari Bay, H. Takahashi 19715, Aug. 22, 1995 (SAPS). CHIRPOI <18a>. [no locality], T. Valentina, Aug. 23, 1995 (SAPS); Peschanaya Bay, H. Takahashi 28553, Aug. 5, 2000 (SAPS).

SOUTH. ITURUP <20>. Moyoro Volc., T. Ishikawa, Sep. 5, 1890 (SAPS); Moyoro-yama, S. Yokoyama, Jul. 27, 1893 (SAPS- 2 sheets); Moyoro Volc., K. Fukuzawa, Aug. 27, 1893 (SAPS); Mt. Atoiya, T. Kawakami 191, Aug. 12, 1898 (SAPS); Mt. Moyoro, T. Kawakami 198, Aug. 12, 1898 (SAPS); Mt. Moyoro Iwo, M. Aizawa, Jul. 4, 1900 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Oyachi, S. Saito, Aug. 11, 1928 (TI- 3 sheets); Mt. Sashiusu, S. Saito, Aug. 22, 1928 (TI); Minamichirippu, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS); Moyoro-yama, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS); Moyoro–Shibetoro, B. Yoshimura & H. Yokoyama, Aug. 5, 1938 (SAPS); Mt. Atoiya, B. Yoshimura, Aug. 14, 1939 (SAPS); Mt. Moyoro, Chishima-chosasyo, Sep. 10, [no year: prob. 1939] (SAPS). KUNASHIR <21>. [no locality], [no collector's name], 1935 (KYO); Chacha, T. Ishikawa, Jul. 21, 1894 (SAPS) [Hybrid? between *P. aleutica* and *P. caerulea*]; Chacha, M. Nagai & M. Shimamura, Jul. 26, 1929 (SAPS- 2 sheets) [Hybrid? between *P. aleutica* and *P. caerulea*, but the flower shape is more similar to that of *P. aleutica*].

17. Phyllodoce caerulea (L.) Bab. [Ezono-tsugazakura]
<SAKHALIN>

NORTH. S of Peninsula of Schmidt <05-upper l.>, T. Fukuda 2275, Aug. 16, 2001 (SAPS); Luguri–Okha <07-lower l.>, Y. Kudo & B. Ishida 7230, Aug. 31, 1923 (SAPS); Oha <07-lower r.>, Okada, Sep. 5, 1923 (TI- 2 sheets); 15km S of Okha <10-upper r.>, H. Takahashi 31170, Jul. 28, 2003 (SAPS); 30km S of Okha <10-lower r.>, H. Takahashi 31156, Jul. 27, 2003 (SAPS); Gulf of Odoptu <11-upper l.>, V. Y. Barkalov 1490, Aug. 3, 2001 (SAPS); E of Gulf of Piltun, Vstrechnaya <11-upper l.>, T. Fukuda 1543, Aug. 4, 2001 (SAPS); East Coast, at 52°45' n.l., Nuto–Chaiwo <19-upper l.>, T. Ishikawa, Jul. 6, 1912 (SAPS- 2 sheets); Seacoast of Chaio <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS).

MIDDLE. 40km E of Palevo, Mt. Changa <34-upper r.>, H. Takahashi 30300, Aug. 7, 2002 (SAPS); Hantuza <37-lower r.>, Ezawa, Jul., 1923 (TI); Upstream of Hoe River <42-lower l.>, S. Sugawara 17685, Aug., 1933 (SAPT); Hoye, Forest of Kyushu Univ., Mt. Mumei-dake <42-lower r.>, Ban, Sep. 13, 1929 (KYO) [determined as *P. aleutica* by Toyokuni]; Shisuka-shicho, Mt. Shirochi-yama <45-upper l.>, S. Sugawara 29274, 29273, Aug. 7, 1935 (SAPS- 2 sheets); E. Coast, forests of Funadomari <45-upper r.>, M. Kawashima, Jul. 16, 1935 (SAPS); Shikka Distr., Mt. Kawashima <45-upper r.>, S. Sugawara no number, 17686 & 17687, Aug. 3, 1935 (SAPS, SAPT- 2 sheets); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22721, Jun. 21, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatawaki & Y. Takahashi 22777, Jun. 23, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Naruko-Nirayama <45-upper r.>, M. Tatewaki & Y. Takahashi 22882, Jun. 26, 1936 (SAPS); Shikka Distr., Naruko (Nirayama) <45-upper r.?>, B. Yoshimura, Aug. 8, 1936 (SAPS); Mt. Shisuka-dake <47-upper l.>, K. Washimi, Jul. 23, 1931 (KYO); Upstream of Shisuka River, divide <47-upper l.>, S. Sugawara 17678-17680, Aug., 1933 (SAPT- 3 sheet): Mt. Shisuka-dake <47-upper l.>, S. Sugawara 17682-17684, Jul. 16, 1934 (SAPT- 3 sheets); Mt. Miharashi-yama <48-lower l.>, [no collector's name], [no date] (KYO); Mt. Isara-yama <52-lower l.>, S. Sugawara 17681, Aug. 17, 1933 (SAPT).

<THE KURILS>

NORTH. PARAMUSHIR <03>. Mt. Chai, Kamogawa, Jul. 27, 1930 (SAPS); Murakami-wan, K. Kojima 1453, Jul. 26, 1932 (TNS).

SOUTH. KUNASHIR <21>. Chacha, M. Nagai & M. Shimamura, Jul. 26, 1929 (SAPS- 3 sheets)[Hybrid? between *P. aleutica* and *P. caerulea*, but the flower shape is more similar to that of *P. caerulea*]; Mt. Chacha-nupuri, Y. Okada, Aug. 3, 1929 (TI, TNS 386956); Mt. Chacha-nupuri, M. Koriba & R. Yoshii, Jul. 23, 1933 (KYO).

18. Rhododendron adamsii Rehder [Karafuto-miyamatsutsuji]
<SAKHALIN>

NORTH. S of Peninsula of Schmidt <05-lower r.>, T. Fukuda 2203, Aug. 16, 2001 (SAPS); Schmidt Peninsula, Cape Longri <05-lower r.>, V. Y. Barkalov 10875, Aug. 16, 2001 (SAPS).

MIDDLE. Shisuka-shicho, Mt. Sekkai-yama (60, 61-rinpan), <39-lower l.>, B. Yoshimura & M. Hara (104), Jul. 15, 1937 (SAPS- 3 sheets, TI); Around the border from Ikeda, Mt. Okada-yama <39-lower l.>, S. Sugawara, Jul. 11, 1938 (KYO); Mt. Asase-yama <44-upper r.>, S. Sugawara 17720-17722, Aug. 6, 1935 (SAPT- 3 sheets); Mt. Asase-yama <44-upper r.>, S. Sugawara 17718, Aug. 7, 1935 (SAPT); Shisuka, Chirie-gun, Mt. Shirochi-yama <45-upper l.>, S. Sugawara no number, 17723 & 29440, Aug. 7, 1935 (KYO, SAPS, SAPT); Shikka Distr., Naruko, Mt. Chonosuke <45-upper r.?>, B. Yoshimura, Aug. 10, 1936 (SAPS).

19. Rhododendron aureum Georgi [Kibana-shakunage]
<SAKHALIN>

NORTH. Near Pilewo, mountain <04-lower r.>, Y. Kudo & B. Ishida 7046, Aug. 24, 1923 (SAPS); SW from the Cape

Elizavety, mouth of River Nala <05-upper l.>, T. Fukuda 1835, Aug. 8, 2001 (SAPS).

MIDDLE. 40km E of Palevo, Mt. Changa <34-upper r.>, H. Takahashi 30323, Aug. 7, 2002 (SAPS); Nabilskiy Mts., Mt. Changa <34-upper r.>, N. Fujii 01153, Aug. 7, 2002 (MAK 343112); Pilevo <36-lower l.>, K. Jimbo, Aug. 13, 1907 (TNS); Shisuka-shicho, Mt. Sekkai-yama (60, 61-rinpan) <39-lower l.>, B. Yoshimura & M. Hara Jul. 15, 1937 (SAPS); Mt. Mimizuku-yama <42-lower r.>, H. Tobita, Jul. 26, 1925 (KYO, TI); Mt. Horoto-yama <42-lower r.>, S. Sugawara 17728, Aug. 25, 1931 (SAPT); Mt. Shisuka-dake <47-upper l.>, K. Washimi, Jul. 23, 1931 (KYO); Mt. Shisuka-dake <47-upper l.>, S. Sugawara 17725, Jul. 23, 1931 (SAPT); Kitashiretoko Peninsula, Naifuto <51-lower l.>, Y. Hoshino et al., Jul. 30, 1933 (SAPS); Kitashiretoko, Chirie <51-lower r.>, S. Sugawara 17729, Jun. 5, 1929 (SAPT); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 30, 1907 (SAPS, TNS).

SOUTH. E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS, TNS); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Nupuripo <57-lower l.>, S. Saito, Aug. 3, 1929 (TI); Upper part of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29574, Aug. 2, 2001 (SAPS); Mt. Kashipo <57-upper r.>, S. Hiratsuka, Aug. 7, 1928 (SAPS); Kashipo, Nishiyama <57-upper r.>, H. Abumiya & G. Takee, Aug. 4, 1932 (SAPS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 31, 1907 (SAPS); Mt. Ochopoka <65-upper r.>, T. Miyake, Jun. 13, 1908 (SAPS); Summit of Mt. Susuya <65-upper r.>, K. Numajiri, Aug. 6, 1925 (TNS); Mt. Susuya <65-upper r.>, S. Sugawara 17731, Aug. 20, 1927 (SAPT); Summit of Mt. Susuya <65-upper r.>, H. Hara, Aug. 13, 1928 (TI); Mt. Suzuya <65-upper r.>, S. Saito, Jul. 26, 1929 (TI); Mt. Susuya <65-upper r.>, S. Suganami, Aug. 16, 1931 (KYO); Mt. Ochiho-dake <65-upper r.>, S. Sugawara 17730, Jul. 20, 1933 (SAPT); Toyohara-gun, Mt. Susuya, H. Sase, Sep. 18, 1937 (SAPS); Chekhovskiy Pass–Mt. Chekhova <65-upper r.>, H. Takahashi 29281 & 29285, Jul. 22, 2001 (SAPS); Peak Chekhov, at the peak-like rocky place <65-upper r.>, T. Fukuda 1178 & 1183, Jul. 22, 2001 (SAPS); Nakashiretoko, Mt. Sankaku-yama <67-lower l.>, S. Sugawara 17726, Jun. 20, 1935 (SAPT); Todomoshiri, Mt. Dainan <73-lower l.>, T. Miyake, Jul. 26, 1906 (SAPS, TNS); Kaiba Isl. <73-lower l.>, S. Komat, Aug. 12, 1915 (TI- 2 sheets); Kaiba Isl. <73-lower l.>, S. Sugawara, Jun. 7, 1928 (TI); Kaiba Isl. <73-lower l.>, S. Sugawara 17727, Jun. 5, 1929 (SAPT); Todomoshiri, Mt. Dainan" <73-lower l.>, Kimoto et al., Jul. 28, 1931 (SAPS); Mt. Shiretoko (Juzozan) <74-upper l.>, T. Miyake, Jul. 22, 1908 (SAPS, TNS).

[No Locality]. T. Iishiba, [no date] (TI).

<THE KURILS>

NORTH. ATLASOVA <01>. [no locality], S. Ito & G. Komori, Aug., 1926 (SAPS). SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); Bettobu, S. Yokoyama, Sep. 22, 1893 (SAPS); [no locality], T. Ishikawa, Jun. 29, 1894 (SAPS); [no locality], K. Endo, Apr. [?], 1903 (TNS); [no locality], K. Endo, Jun. 29, 1903 (SAPS); [no locality], K. Yendo, Jul. 2, 1903 (TI); Kataoka-wan, M. Tatewaki 17254, May 30, 1930 (SAPS); Hyakuike-gahama, Y. Okada, Aug. 18, 1931 (TNS); Bettobi, J. Ohwi & R. Yoshii 26, Jul. 25, 1934 (KYO); Kataoka, J. Ohwi & R. Yoshii 69, Aug. 18, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23299, Aug. 8, 1997 (SAPS); SW of Baikovo, H. Takahashi 28004, Jul. 24, 2000 (SAPS). PARAMUSHIR <03>. Musashi-wan, M. Aizawa, Jun. 22, 1900 (SAPS); Chitose-wan, Y. Kudo 4853, Jun. 26, 1920 (SAPS); Murakami-wan, Y. Kudo 4957, Jul. 4, 1920 (SAPS); Magarikawa, Y. Kudo 5262, Jul. 13, 1920 (SAPS); Hiratazaki, Y. Kudo 5387, Jul. 21, 1920 (SAPS); Murakami-wan, Y. Kudo 5542, Jul. 27, 1920 (SAPS); Shirakawa, Y. Kudo 5609, Jul. 30, 1920 (SAPS); Urafuto-yama, Y. Kudo 5811, Aug. 8, 1920 (SAPS); Murakami-wan, M. Tatewaki 17245, May 29, 1930 (SAPS); Yamato-wan, M. Tatewaki 17355, Jun. 7, 1930 (SAPS); Mt. Murakami-dake, K. Kojima, Jul. 26, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Murakami-wan, J. Ohwi & R. Yoshii 5764, Jul. 30, 1934 (KYO); Vasil'yeva Bay, Y. Kuwahara, Aug. 3, 1996 (SAPS); E of Vasil'yeva Bay, H. Takahashi 21046, Aug. 3, 1996 (SAPS); NE of Mt. Ebeko, H. Takahashi 23151, Aug. 5, 1997 (SAPS); NE of Mt. Ebeko, H. Takahashi 23136, Aug. 5, 1997 (SAPS).

MIDDLE. MAKANRUSHI <05>. In heath, M. Tatewaki 11215, Aug. 9, 1928 (SAPS); [no locality], M. Tatewaki 11377, Aug. 11, 1928 (SAPS); Zakat Bay, H. Takahashi 24027, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11114, Aug. 8, 1928 (SAPS); Nemo Bay, H. Takahashi 21236, Aug. 4, 1996 (SAPS); Mussel Bay–Kol'tsevoye Lake, H. Takahashi 21396, Aug. 7, 1996 (SAPS). KHARIMKOTAN <07>. Nishiura, M. Tatewaki 17206, May 28, 1930 (SAPS); Severgina Bay, H. Takahashi 21571, Aug. 8, 1996 (SAPS); S of Lazurnoye Pond, H. Takahashi 28147, Jul. 28, 2000 (SAPS). SHIASHKOTAN <10>. [no locality], T. Ishikawa, Jun. 23, 1894 (SAPS); Otome-wan, M. Tatewaki 17335, Jun. 6, 1930 (SAPS); Zakatnaya Bay, H. Takahashi 21834, Aug. 12, 1996 (SAPS). MATUA <12>. Hokuto-misaki, M. Tatewaki & Y. Tokunaga 12223, Sep. 5, 1928 (SAPS); Dvoynaya Bay–Aynu Bay, H. Takahashi 22086, Aug. 15, 1996 (SAPS); Dvoynaya Bay–Aynu Bay, H. Takahashi 22063, Aug. 15, 1996 (SAPS). RASSHUA <13>. Kitakado, M. Tatewaki & Y. Tokunaga 12448, Aug. 6, 1928 (SAPS); Mikasa, M. Tatewaki & Y. Tokunaga 12353, Aug. 6, 1928 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14974, Aug. 3, 1929 (SAPS- 2 sheets); Mt. Choto-zan, M. Tatewaki & K. Takahashi 15318, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19029, Aug. 12, 1995 (SAPS); S of Yoriki-hama, H. Takahashi 19156, Aug. 12, 1995 (SAPS). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & Y. Tokunaga 12542, Aug. 11, 1928 (SAPS); In heath, M. Tatewaki & K. Takahashi 15910, Sep. 14, 1929 (SAPS); SW side to central part, H. Takahashi 22961, Aug. 2, 1997 (SAPS). KETOI <15>. [no locality], M. Tatewaki & Y. Tokunaga 11492, Sep. 1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15188, Aug. 14, 1929 (SAPS); Kodakigawa, stream, M. Tatewaki & K. Takahashi 15260, Aug. 15, 1929 (SAPS); Kodakigawa, bog, M. Tatewaki & K. Takahashi 15307, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15324, Aug. 17, 1929 (SAPS); Stochnyy River, H. Takahashi 19593 & 19601, Aug. 19, 1995 (SAPS- 2 sheets). SIMUSHIR <16>. Broton Bay, M. Tatewaki & Y. Tokunaga 11660, Aug. 14, 1928 (SAPS); Broughton-Bay, M. Tatewaki 17406, Jun. 9, 1930 (SAPS); Malaya Inlet, H. Takahashi 19520, Aug. 18, 1995 (SAPS); Nakatomari Bay, H. Takahashi 19717, Aug. 22, 1995 (SAPS). CHIRPOI <18a>. [no locality], Kodama, Jun., 1893 (SAPS);

[As Three Brothers], [no locality], T. Kitahara, Aug. 20, 1895 (SAPS); Peschanaya Bay, H. Takahashi 19859, Aug. 23, 1995 (SAPS). BRAT CHIRPOEV <18b>. [no locality], Tarao, Jun. 18, 1892 (SAPS); Uglovaya Bay, H. Takahashi 28487, Aug. 4, 2000 (SAPS). URUP <19>. Suribachi-yama Volcano, K. Jimbo, Jun. 16, 1891 (SAPS); Anama–Yoshinohama, K. Uchida, Jun. 17, 1891 (SAPS- 2 sheets); Anama, terrace, K. Jimbo, Jun. 18, 1891 (SAPS); [no locality], K. Miura, Jul. 8-9, 1906 (SAPS); Kobune, M. Tatewaki 9791, Aug. 26, 1927 (SAPS); Tokotan, M. Tatewaki 9671, Aug. 29, 1927 (SAPS); Daibahama, M. Tatewaki 9921, Sep. 1, 1927 (SAPS); Onsenzaki, M. Tatewaki 10063, Sep. 9, 1927 (SAPS); 15km N of Van-Der-Lind Cape, M. Ohara, Aug. 26, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20089, Aug. 28, 1995 (SAPS, TUS); Tetyayeva Bay, H. Takahashi 22247, Aug. 21, 1996 (SAPS).

SOUTH. ITURUP <20>. Moyoro Volcano, T. Ishikawa, Sep. 5, 1890 (SAPS); Peretarabets Mt., K. Jimbo, Jun. 1, 1891 (SAPS); Moyoroyama, S. Yokoyama, Jul. 27, 1893 (SAPS- 2 sheets); Mt. Atoiya, T. Kawakami, Aug. 11, 1898 (SAPS); Rakko-jima, T. Kawakami 283, Aug. 27, 1898 (SAPS); Moyoro, G. Tanaka & Ken. Miyabe, Jul. 17, 1910 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Oyachi, S. Saito no number & 6125, Aug. 11, 1928 (TI, TNS); Mt. Hitokappu-yama, M. Koriba & R. Yoshii, Aug. 14, 1933 (KYO); Minamichirippu, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS). KUNASHIR <21>. Furukamapp, M. Tatewaki 3373, Jul. 26, 1923 (SAPS); Mt. Rausu, H. Ishikawa 3694, Aug. 1, 1923 (SAPS); Mt. Rausu, K. Ito, Sep. 22, 1939 (SAPS); Mt. Moyoro, Chishima-chosasyo, [no year; prob. 1939] (SAPS). SHIKOTAN <22>. Mt. Okkaibetsu, S. Saito 1467, Sep. 5, 1925 (TI); K. Kondo 7837, Aug. 11, 1927 (TI); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI- 2 sheets); Chiboi, K. Kondo, Aug. 10, 1929 (TI); Horobetsu–Okkaibetsu, K. Kondo, Aug. 31, 1929 (TI); Chiboi–Umanose, K. Kondo, Sep. 7, 1929 (TI); Umanose, J. Ohwi, Jul. 31, 1931 (KYO); Shakotan, S. T. Ono, Jun. 1, 1932 (TI); Shakotan, S. T. Ono, Jun. 3, 1934 (TNS); [no locality], Ono, Jul., 1938 (SAPT).

20. Rhododendron brachycarpum D.Don ex G.Don [Hakusan-shakunage]
<THE KURILS>

SOUTH. ITURUP <20>. Peretarabets Sulphur Mt., K. Jimbo, Jun. 1, 1891 (SAPS). KUNASHIR <21>. Tohutsu-mura, Furukamapp, C. Endo, Sep. 17, 1894 (SAPS).

21. Rhododendron lapponicum (L.) Wahlenb. [Sakai-tsutsuji]
<SAKHALIN>

NORTH. East Coast, at 52°45' n.l., Nuto–Chaiwo <19-upper l.>, T. Ishikawa, Jul. 6, 1912 (SAPS); Seacoast of Chaiwo <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS).

MIDDLE. Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS, TNS 380672); Poronai-mura <37-lower r.>, T. Miyake, Aug. 29, 1906 (SAPS); Mirnyy–Pervomayskoye <38-lower l.>, H. Takahashi 30469, Aug. 10, 2002 (SAPS); 20km NE of Smirnykh, banks of the Poronay RAA Mirnyy <38-lower l.>, N. Fujii 01284, Aug. 10, 2002 (MAK 346154); Tobani <43->, T. Miyake, Aug. 20, 1906 (SAPS); Shisuka-shicho, Atsunai River <45-upper r.>, Y. Hoshino et al., Jul. 12, 1933 (SAPS); Nairo <48-lower l.>, S. Sugawara 17788, Jun. 1, 1936 (SAPT); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Near Shisuka, R. Shottoi <48-upper r.>, I. Namikawa, Aug. 18, 1914 (SAPS); Shisuka <48-upper r.>, S. Sugawara 17780 & 17781, Jun., 1928 (SAPT- 2 sheets); Shisuka <48-upper r.>, S. Sugawara 37, Jun. 8, 1928 (TI); Shisuka <48-upper r.>, S. Sugawara no number & 17784, Jun. 15, 1928 (SAPT, TI); Siska <48-upper r.>, S. Sugahara, Jul. 15, 1928 (KYO); Siska, tsundra, Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Shisuka River, tundra <48-upper r.>, H. Hara, Aug. 3, 1931 (TI- 2 sheets); Shisuka-shicho, Taraika–Nimenjo <49-upper r.>, B. Yoshimura & M. Hara, Jul. 10, 1907 (SAPS); Rukutama <49-upper r.>, S. Sugawara 17783, 17785 & 17786, Jun. 5, 1939 (SAPT- 3 sheets); Tohkishi <50-upper l.>, S. Sugawara 17782, Aug., 1927 (SAPT); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 16, 1933 (SAPS). Shisuka-shicho, Toyo[?]koro, tundra <?>, M. Kawahsima, Jun. 3, 1935 (SAPS).

[No/uncertain Locality]. S. Komatsu, 1909 (TI- 4 sheets).

22. Rhododendron tschonoskii Maxim. [Kome-tsutsuji]
<THE KURILS>

SOUTH. KUNASHIR <21>. Mt. Tomari, M. Tatewaki 25501, Aug. 20, 1936 (SAPS- 2 sheets).

23. Therorhodion camtschaticum (Pall.) Small [Ezo-tsutsuji]
<SAKHALIN>

MIDDLE. Pilevo <36-lower l.>, K. Jimbo, Aug. 13, 1907 (TNS); Mt. Horoto-yama <42-lower r.>, S. Sugawara 17823, Aug. 25, 1931 (SAPT); E. Coast, upstream of Naruko River <45-upper l.?>, M. Kawashima 16, Jul. 21, 1935 (SAPS); Mt. Shisuka-dake <47-upper l.>, K. Washimi, Jul. 23, 1931 (KYO); Upstream of Shisuka River <47-upper l.>, S. Sugawara 17824 & 17826, Jul. 16, 1933 (SAPT- 2 sheets); Nairo-sawa, divide <47-lower r.?>, S. Sugawara 17829, Jul. 10, 1933 (SAPT); Shisuka-shicho, Motomari <51-upper l.>, Y. Hoshino et al., Aug. 3, 1933 (SAPS); Mt. Isara-yama <52-lower l.>, S. Sugawara 17822, Aug. 17, 1933 (SAPT); Mt. Shiritori <54-lower l.>, K. Fujita, Aug. 5, 1928 (SAPS).

SOUTH. E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS, TNS); Mt. Tosso <57-lower l.>, G. Yamada, Aug. 4, 1926 (KYO); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 20, 1927 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Tosso <57-lower l.>, N. Hiratsuka, Aug. 7, 1928 (SAPS); Mt. Nupuripo <57-lower l.>, S. Saito, Aug. 3, 1929 (TI- 2 sheets); Summit of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI- 2 sheets); Mt. Tosso <57-lower l.>, J. Ohwi, Jul. 22, 1932 (KYO); Mt. Tosso <57-lower l.>, T. Tsuyama, Jul. 24, 1932 (TI); Mt. Tosso <57-lower l.>, S. Sugawara 17825, Jul. 18, 1935 (SAPT); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29564, Aug. 2, 2001 (SAPS); Mt. Kashipo <57-upper r.>, S. Sugawara 17827, Aug. 27, 1929 (SAPT); Kashipo, Kashipo-dake <57-upper r.>, H. Abumiya et al., Jul. 22, 1932 (SAPS); Kashipo, Nishiyama <57-upper r.>, H. Abumiya et al., Jul. 31, 1932 (SAPS); E. Coast, Mt. Chikaporonai <59-upper l.>, T. Miyake,

Aug. 12, 1907 (SAPS, TNS); Tikhaya village, mouth of Tikhaya River <59-upper l.>, T. Fukuda 2499, Aug. 28, 2001 (SAPS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 31, 1907 (SAPS); Summit of Mt. Susuya <65-upper r.>, K. Numajiri, Aug. 6, 1925 (TNS); Mt. Susuya <65-upper r.>, S. Sugawara 17828, Jul. 10, 1927 (SAPT); Summit of Mt. Susuya <65-upper r.>, H. Hara, Aug. 3, 1928 (TI); Chekhovskiy Pass–Mt. Chekhova <65-upper r.>, H. Takahashi 29287, Jul. 22, 2001.07.22 (SAPS); Peak Chekhov, the peak-like rocky place <65-upper r.>, T. Fukuda 1176, Jul. 22, 2001 (SAPS- 2 sheets); Isl. Kaibato, Mt. Dainan <73-lower l.>, Kimoto et al., Jul. 26, 1931 (SAPS).

<THE KURILS>

NORTH. ATLASOVA <01>. Kitaura, S. Ito & G. Komori, Jul. 23, 1926 (SAPS); Chinowatashi–Minamiura, Y. Okada, Jul. 23, 1931 (TNS). SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); [no locality], S. Gunji, 1897 (SAPS); [no locality], S. Gunji, 1898 (SAPS); [no locality], K. Endo, Aug. (17), 1903 (TI, TNS); Saisyu-gahara, K. Endo, Aug. 17, 1903 (SAPS); Shiomi-gawa, J. Ohwi & R. Yoshii 5711, Jul. 29, 1934 (KYO); Kataoka, J. Ohwi & R. Yoshii 5677, Aug. 18, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23283, Aug. 8, 1997 (SAPS); Baikovo, H. Takahashi 27975, Jul. 24, 2000 (SAPS); Baikovo, M. Nakatani, Jul. 24, 2000 (SAPS). PARAMUSHIR <03>. Ottomai, [no collector's name], Aug. 15, 1892 (MAK 101481); Ottomai (Otomai), C. Tarao, Aug. 25, 1892 (MAK 101482, SAPS, TI); Kuzira-wan, T. Matsubara, Jul. 24, 1917 (SAPS); Shikatanoma, Y. Kudo 5087, Jul. 11, 1920 (SAPS); Yotsuiwahana, Y. Kudo 5179, Jul. 12, 1920 (SAPS); Arakawa, Y. Kudo 5361, Jul. 15, 1920 (SAPS); Hiraizaki, Y. Kudo 5388, Jul. 21, 1920 (SAPS); Kashiwabara-wan, Y. Kudo 5517, Jul. 26, 1920 (SAPS); Shirakawa, Y. Kudo 5608, Jul. 30, 1920 (SAPS); Ruesan, Y. Kudo 5673, Aug. 5, 1920 (SAPS); Ruesan, Y. Kudo 5851, Aug. 11, 1920 (SAPS); Kakumabetsu, [no collector's name], Jul. 26, 1931 (SAPS); Mt. Chikura-dake, Y. Okada, Jul. 30, 1931 (TNS); Mt. Kanmuri-dake, K. Kojima, Jul. 25, 1932 (TNS); Kuzira-hama, H. Koidzumi, Jul. 31, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Arakawa, J. Ohwi & R. Yoshii '96, Jul. 10, 1934 (KYO); Suribachi-wan, J. Ohwi & R. Yoshii 5376, Jul. 22, 1934 (KYO); Suribachi, J. Ohwi & R. Yoshii 5539, Jul. 23, 1934 (KYO); Kashiwabara-wan, J. Ohwi & R. Yoshii 5957, Aug. 2, 1934 (KYO); Utesnyy River, H. Takahashi 20864, Aug. 1, 1996 (SAPS); NE of Mt. Ebeko, H. Takahashi 23160 & 23176, Aug. 5, 1997 (SAPS- 2 sheets). [Island Uncertain; Shumshu or Paramushir], K. Fujita, 1944-45 (TNS);

MIDDLE. MAKANRUSHI <05>. In heatsh, M. Tatewaki 11216, Aug. 9, 1928 (SAPS); [no locality], M. Tatewaki 11382, Aug. 11, 1928 (SAPS); Zakat Bay, H. Takahashi 24043 & 24063, Aug. 18, 1997 (SAPS- 2 sheets). ONEKOTAN <06>. Nemo, M. Tatewaki 11072, Aug. 8, 1928 (SAPS); Nemo, M. Tatewaki 11193, Aug. 9, 1928 (SAPS); Nemo Bay, M. Yabe, Aug. 4, 1996 (SAPS); Nemo Bay, H. Takahashi 21186, Aug. 4, 1996 (SAPS); N of Angibi Cape, H. Takahashi 21335, Aug. 5, 1996 (SAPS); Nemo Bay, H. Takahashi 28106, Jul. 27, 2000 (SAPS). KHARIMKOTAN <07>. Severgina Bay, H. Takahashi 21518, Aug. 8, 1996 (SAPS). EKARMA <09>. E of Cape Shpilevoy, H. Takahashi 21679, Aug. 10, 1996 (SAPS). SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21764, Aug. 11, 1996 (SAPS, TUS); Zakatnaya Bay, M. Nakatani, Jul. 29, 2000 (SAPS- white fls.). RAIKOKE <11>. E side of island, H. Takahashi 21910, Aug. 13, 1996 (SAPS). MATUA <12>. Nakadomari, M. Tatewaki & Y. Tokunaga 12139, Aug. 7, 1928 (SAPS); Mt. Fuyo, M. Tatewaki & Y. Tokunaga 12217, Sep. 5, 1928 (SAPS); Dvoynaya Bay, H. Takahashi 22011, Aug. 14, 1996 (SAPS); Dvoynaya Bay–Orlova Cape, M. Nakatani, Jul. 31, 2000 (SAPS). RASSHUA <13>. [no locality], Kodama, Jul., 1893 (SAPS); Mikasa, M. Tatewaki & Y. Tokunaga 12384, Aug. 6, 1928 (SAPS); Minamikado, M. Tatewaki & K. Takahashi 14992, Aug. 4, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 14858, Aug. 2, 1929 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14905, Aug. 3, 1929 (SAPS); Mt. Choto-zan, M. Tatewaki & K. Takahashi 15137, Aug. 5, 1929 (SAPS); Mt. Choto-zan, M. Tatewaki & K. Takahashi 15312, Aug. 10, 1929 (SAPS); Yoriki-hama, H. Takahashi 19033 & 19047, Aug. 12, 1995 (SAPS, TUS); S of Yoriki-hama, H. Takahashi 19146, Aug. 12, 1995 (SAPS). USHISHIR-YANKICHA <14b>. M. Tatewaki & K. Takahashi 15817, Jul. 30, 1929 (SAPS); Mountain ridge, H. Takahashi 22891 & 22908, Aug. 1, 1997 (SAPS- 2 sheets). KETOI <15>. Lake Ketoi, M. Tatewaki & K. Takahashi 15347, Aug. 17, 1929 (SAPS); Ishikuzurehama, M. Tatewaki & K. Takahashi 15360, Aug. 17, 1929 (SAPS); Stochnyy River, H. Takahashi 19634, Aug. 19, 1995 (SAPS, TUS). SIMUSHIR <16>. Brotonzaki, M. Tatewaki & Y. Tokunaga 11700, Aug. 14, 1928 (SAPS); Nakadomari, M. Tatewaki & Y. Tokunaga 11896, Aug. 17, 1928 (SAPS); Simushir, M. Tatewaki & Y. Tokunaga 11867, Sep. 13, 1928 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 15984, Jul. 25, 1929 (SAPS); Nakatomari Bay, H. Takahashi 19732, Aug. 22, 1995 (SAPS, TUS). CHIRPOI <18a>. Peschanaya Bay, H. Takahashi 19846, Aug. 23, 1995 (SAPS). BRAT CHIRPOEV <18b>. Uglovaya Bay, H. Takahashi 28498, Aug. 4, 2000 (SAPS). URUP <19>. [no locality], K. Miura, Jul. 8-9, 1906 (SAPS); Near Tokotan, M. Tatewaki 9613, Aug. 29, 1927 (SAPS); W of Tokotan, M. Tatewaki 9981, Sep. 3, 1927 (SAPS); [no locality], K. Watanabe, Jun.-Jul., 1944 (TI); Otkrytyy Bay, H. Takahashi 18560 & 18568, Aug. 5, 1995 (SAPS- 2 sheets); Ukromnaya Bay, H. Takahashi 22178, Aug. 20, 1996 (SAPS); Chernoburka Bay, M. Nakatani, Aug. 9, 2000 (SAPS).

SOUTH. ITURUP <20>. Moi[?]keshi Bay, T. Ishikawa, Aug. 18, 1890 (SAPS); Mt. Moyoro-yama, K. Fukuzawa, Aug. 27, 1893 (SAPS); Mt. Moyoro-yama, T. Kawakami 186 & 187, Aug. 12, 1898 (SAPS- 2 sheets); Mt. Chirippu-yama, T. Kawakami 285, Aug. 19, 1898 (SAPS); Moyoro, Mt. Iwo-zan, M. Aizawa, Jul. 4, 1900 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Porosu–Sokiya, G. Tanaka & Ken. Miyabe, Jul. 21, 1910 (SAPS); Shamanbe, K. Kondo, Jul. 14-15, 1927 (TI- 2 sheets); Porosu–Sokiya, K. Kondo, Jul. 18, 1927 (TI- 2 sheets); Porosu–Sokiya, S. Saito, Aug. 7, 1928 (TI); Oyachi, S. Saito 6128, Aug. 11, 1928 (TI- 3 sheets); Mt. Hitokappu-yama, M. Koriba & R. Yoshii, Aug. 14, 1933 (KYO); Minamichrippu, B. Yoshimura & H. Yokoyama, Jul. 24, 1938 (SAPS); Mt. Moyoro-yama, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS); Mt. Atosa-yama, B. Yoshimura, Aug. 14, 1939 (SAPS); Moyoro, Chishima-chosasyo, Sep. 15, [no year; prob. 1939] (SAPS- 2 sheets). KUNASHIR <21>. Seseki, U. Faurie 5107,Aug. 11, 1889 (SAPS); Furukamapp, M. Tatewaki 3247 & 3347, Jul. 25, 1923 (SAPS, SAPT); Nikishiro, M. Tatewaki 3574, Jul. 29, 1923

(SAPS); Mt. Rausu, H. Ishikawa 3695, Aug. 1, 1923 (SAPS); Mt. Chacha-nupuri, M. Koriba & R. Yoshii, Aug. 24, 1933 (KYO); [no locality], [no collector's name], 1935 (KYO); Mt. Tomari, M. Tatewaki 25496, Aug. 20, 1936 (SAPS); Mt. Chacha, K. Ito, Aug., 1939 (SAPS). SHIKOTAN <22>. [no locality], K. Miyabe, Jul. 2, 1884 (TI); Shakotan, K. Miyabe, Jul. 27, 1884 (SAPS); Shakotan, T. Kawakami 510, Aug. 1, 1898 (SAPS); Shakotan, K. Miura, Jul. 26, 1906 (SAPS); Anama, Arai, Jul. 6, 1909 (TNS); Around Shakotan, [no collector's name; prob. H. Takeda], Jul. 16, 1909 (SAPS); Anama, H. Takeda, Jul. 20, 1909 (SAPS); Anama, [no collector's name; prob. H. Takeda], Jul. 24, 1909 (SAPS); Anama, M. Arai, Jul. 6, 1910 (SAPS); Anama, G. Tanaka & Ken. Miyabe, Aug. 14, 1910 (SAPS); Anama, M. Arai, Sep. 14, 1910 (SAPS); Mt. Shakotan, S. Saito 3300, Aug. 30, 1925 (TI); Shakotan, S. Saito, Sep. 2, 1925 (TI); Horobetsu, S. Saito 1437, Sep. 4, 1925 (TI); [no locality], K. Kondo 7827 & 7838, Aug. 11, 1927 (TI- 3 sheets); Shakotan, M. Tatewaki 9502, Aug. 23, 1927 (SAPS); Shakotan, K. Kondo, Aug. 4, 1929 (TI); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI); Chiboi, K. Kondo, Aug. 10, 1929 (TI- 2 sheets, TNS); Anama, K. Kondo, Aug. 28, 1929 (TI- 2 sheets); Mt. Tomari, K. Kondo, Sep. 5, 1929 (TI); Chiboi–Umanose, K. Kondo, Sep. 7, 1929 (TI); Shakotan, S. T. Ono, Jul. 5, 1930 (SAPT, TI); Matakotan, J. Ohwi, Jul. 19, 1931 (KYO); Shakotanzaki, J. Ohwi no number & 263, Jul. 27, 1931 (KYO, SAPS); Shakotan-zaki, J. Ohwi, Sep. 3, 1931 (KYO); Shakotan-yama, M. Tatewaki 20795, Jun. 29, 1934 (SAPS); [no locality], [no collector's name], 1937 (TNS); [no locality], S. T. Ono, Jun., 1938 (SAPS).

24. Therorhodion redowskianum (Maxim.) Hutch. [Kumoma-tsutsuji]

<SAKHALIN>

MIDDLE. 40km E of Palevo, Mt. Changa, alt. 1120-1511m <34-upper r.>, H. Takahashi 30335, Aug. 7, 2002 (SAPS); 40km E of Palevo, Mt. Changa, alt. 1400-1510m <34-upper r.>, H. Takahashi 30351, Aug. 7, 2002 (SAPS); Nabilskiy Mts., Changinskiy Pass <34-upper r.>, V. Y. Barkalov 2440 (SAPS); Shisuka-shicho, Mt. Sekkai-yama (60-61-rinpan) <39-lower l.>, B. Yoshimura & M. Hara no number & 103, Jul. 15, 1937 (SAPS- 3 sheets, TNS); Mt. Okada-yama <39-lower l.>, S. Sugahara, Jul. 11, 1938 (KYO); Mt. Okada-yama <39-lower l.>, S. Sugawara 17793-17797, Aug. 10, 1938 (SAPT- 5 sheets); E. Coast, Shikka Distr., the upper Naruko <45-upper l.?>, M. Kawashima, Jul. 21, 1935 (SAPS- 2 sheets); Shikka Distr., the upper Naruko <45-upper l.?>, B. Yoshimura, Aug. 14, 1936 (SAPS).

25. Vaccinium microcarpum (Turcz. ex Rupr.) Schmalh. [Hime-tsurukokemomo]

<SAKHALIN>

NORTH. Pomere–Moskariwo, Takada-shoka, on the peat <06-lower r.>, Y. Kudo & B. Ishida 7338, Aug. 31, 1923 (SAPS); East Coast, at 52°45' n.l., Nuto–Chaiwo <19-upper l.>, T. Ishikawa, Jul. 6, 1912 (SAPS); Nyiwo, Ins. Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6552, Aug. 14, 1922 (SAPS); Parukata, tundra <26-upper r.>, Y. Kudo & M. Tatewaki 6431, Aug. 10, 1922 (SAPS).

MIDDLE. Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Shisuka-shicho, Sibunkoro <45-lower r.>, Y. Hoshino et al., Jul. 6, 1933 (SAPS); Nairo <48-lower l.>, S. Sugawara 17658, Aug. 6, 1930 (SAPT); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS, TNS); Tobani <48-upper r.?>, T. Miyake, Aug. 20, 1906 (SAPS, TNS 380698); Siska <48-upper r.>, T. Sawada, Aug. 14, 1923 (TI); Shisuka <48-upper r.>, S. Sugawara 17660, Jun., 1925 (SAPT); Shisuka, Experiment Forest of Kyoto Univ. <48-upper r.>, T. Chono, Jul. 28, 1928 (TNS); Shisuka <48-upper r.>, H. Otani & Y. Imai, Jul. 20, 1930 (SAPS); Amiba < 48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Horanai River, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Shisuka-cho, Otasu <48-upper r.>, Y. Hoshino et al., Jul. 8, 1933 (SAPS); Taraika <49-upper l.>, T. Miyake, Aug. 14, 1906 (SAPS); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1904 (TI- 3 sheets, mingled with *V. oxycoccus*); Shisuka-shicho, Taraika–Nimenjo <49-upper r.>, B. Yoshimura & M. Hara, Jul. 10, 1937 (SAPS); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS); Shisuka-shicho, Nokoro <50-upper r.>, M. Kawasima, Jul. 7, 1935 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 27, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS).

SOUTH. Y. Hoshino, S. Okada & S. Sugiyama, Jul. 20, 1933 (SAPS); Maguntan <57-lower l.>, S. Saito 995, Aug. 5, 1929 (TI- 2 sheets); Hoyori-mura, Maguntan <57-lower l.>, H. Sase, Aug. 13, 1936 (SAPS); Odasamu <59-lower l.>, S. Otagiri, Jul. 1, 1930 (KYO, mingled with *V. oxycoccus*); Toyohara-shicho, (Kurokawa) Fukakusa <61-lower r.>, S. Sugawara, Sep. 10, 1925 (SAPS); Kurokawa <62-lower l.>, S. Sugawara 17659, Jul. 15, 1926 (SAPT); Kurokawa mire <62-lower l.>, H. Hara, Jul. 31, 1931 (TI); Enoura <65-lower l.>, S. Sugawara 17657, Jul. 18, 1929 (SAPT); Korsakovsky Distr., Susuya moor, Ozeretskoye <65-lower l.>, S. Noshiro, Y. Iokawa & M. Suzuki 970705-18, Jul. 5, 1997 (TI); 10km E of Korsakov, N of Prigordnoye, E side of Mereya River <70-upper r.>, H. Takahashi 29425, Jul. 28, 2001 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 19, 1908 (SAPS, TNS); Nagahama-gun, Tobuchi-mura <71-upper r.>, H. Sasa, Sep. 13, 1936 (SAPS); Notoro–Kiridoshi <73-lower r.>, K. Kondo, Sep. 3, 1929 (TI).

[No Locality]. T. Miyake, [no date] (TNS).

<THE KURILS>

NORTH. SHUMSHU <02>. Numajiri [?], Y. Okada, Aug. 18, 1931 (TNS); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5640, Jul. 28, 1934 (KYO). PARAMUSHIR <03>. Suribachi, J. Ohwi & R. Yoshii 5429, Jul. 22, 1934 (KYO, SAPS).

MIDDLE. KETOI <15>. Isozaki, M. Tatewaki & K. Takahashi 15576, Aug. 24, 1929 (SAPS). SIMUSHIR <16>. Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11818, Aug. 16, 1928 (SAPS). URUP <19>. Kobune, M. Tatewaki 9824, Aug. 26, 1927 (SAPS); 15km NE of Van-Der-Lind, M. Ohara, Aug. 26, 1995 (SAPS).

SOUTH. KUNASHIR <21>. Furukamappu, J. Ohwi, Aug. 12, 1923 (TNS). SHIKOTAN <22>. Kiritoshi–Debari, J. Ohwi, Aug. 7, 1931 (KYO); Shakotan, Kiridoushi, S. Ono, Aug. 15, 1931 (SAPS); Shikotan-matsuhara, M. Tatewaki 20843, Jun. 22, 1934 (SAPS); Shakotan, Inemoshiri, S. T. Ono 48, Jun. 22, 1934 (TI); Shikotan-matsuhara, D. Akaishi 20885,

Jun. 29, 1934 (SAPS).

26. Vaccinium ovalifolium Sm. [Kuro-usugo] <SAKHALIN>

NORTH. Near Pilewo, mountain <04-lower r.>, Y. Kudo & B. Ishida 7047, Aug. 24, 1923 (SAPS); Oha <7-lower r.>, Okada, Sep. 3, 1923 (TI- 2 sheets); Pupuni, in sylvis <26-lower l.>, Y. Kudo & M. Tatewaki 6358, Aug. 8, 1922 (SAPS).

MIDDLE. Alexandrovski <28-lower l.>, S.Takeo, Aug., 1905 (SAPS); Adatuim <29-upper l.>, Okada, Aug. 23, 1923 (TI); 35-40km E of Kirovskoye, N of Chamginskyiy Pass <34-upper r.>, N. Fujii 01227, Aug. 8, 2002 (MAK 346156, SAPS); 40km E of Palevo, N of Changinskiy Pass <34-upper r.>, H. Takahashi 30373, Aug. 8, 2002 (SAPS); NW of Pogranichnoye, S bank of the Langeri River <35-lower r.>, N. Fujii 01296, Aug. 11, 2002 (MAK 346155); Hinan-ekisha–Aobaeki <36-lower l.>, Y. Kudo & M. Tatewaki 6175, Jul. 30, 1922 (SAPS); Anbetsu <36-lower l.>, K. Kawai & Y. Tokunaga, Sep. 2, 1929 (SAPS); Anbetsu, Ooiwa-toge <36-lower l.>, Y. Tokunaga & K. Kawai, Sep. 2, 1929 (SAPS); Aobaeki–Kamionoru <36-upper r.>, Y. Kudo & M. Tatewaki 6203, Jul. 31, 1922 (SAPS); Eastern boundary, Asase <40-lower l.>, Y. Hoshino et al., Aug. 11, 1933 (SAPS); Asase <40-lower l.>, S. Sugawara 17872, Aug. 4, 1935 (SAPT); Ennai <40-lower l.>, S. Sugawara 17870 & 17871, Aug. 5, 1935 (SAPT- 2 sheets); Shisuka-shicho, Chirie-gun, Ennai <40-lower l.>, M. Tatewaki & Y. Takahashi 22457, Jun. 13, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Ennai <40-lower l.>, M. Tatewaki & Y. Takahashi 22474, Jun. 14, 1936 (SAPS); Shisuka, Ennai, border <40-lower l.>, S. Sugawara 28691, Aug. 5, 1938 (SAPS); Shisuka, Saren <40-lower r.>, S. Sugawara 28652 & 28653, Aug. 4, 1935 (SAPS); Hoe <42-lower r.>, S. Sugawara 17867-17869, Aug. 10, 1931 (SAPT- 3 sheets); Shisuka-gun, Hoe <42-lower r.>, S. Sugawara, Aug. 6, 1932 (KYO); Shisuka-shicho, Chirie-gun, Chirikoro <45-upper r.>, M. Tatewaki & Y. Takahashi 22669, Jun. 20, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22722, Jun. 21, 1936 (SAPS); Kitashiretoko Peninsula, Shibunkoro <45-lower r.>, Y. Hoshino et al., Aug. 4, 1933 (SAPS); Nayoshi-gun, Kitaozawa <46-upper l.>, M. Henmi, Jun. 1, 1943 (MAK 80900, TNS); Nayoshi-gun, Kitaozawa, mountain <46-upper l.>, M. Henmi, Jul. 21, 1945 (MAK 80899); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (TNS); Nayoro <48-lower l.>, I. Namikawa, Aug. 13, 1914 (SAPS); Tomarikishi <48-lower l.>, G. Koidzumi, Aug. 23, 1930 (KYO- 2 sheets); Tomarikishi <48-lower l.>, S. Ban, [no date] (KYO); Jimutaki <50-upper r.>, K.Miyabe & T.Miyagi, Jul. 24, 1906 (SAPS); Shisuka, Nokoro <50-upper r.>, S. Sugawara 30103, Aug. 13, 1935 (SAPS); Nokoro <50-upper r.>, S. Sugawara 17878, Aug. 16, 1935 (SAPT); Shisuka, Nokoro divide <51-upper l.ÅH>, S. Sugawara 29641, Jul. 31, 1935 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 12, 1933 (SAPS); Mt. Isara-yama <52-lower l.>, S. Sugawara 17875, Aug. 17, 1933 (SAPT); Minaminiitoi <54-upper r.?>, H. Hara, Aug. 4, 1931 (TI); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS).

SOUTH. Mt. Tosso <57-lower l.>, S. Sugawara 17963, Aug. 3, 1925 (SAPT); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Tosso <57-lower l.>, S. Sugawara 17987, Jun. 8, 1929 (SAPT); Maguntan <57-lower l.>, S. Sugawara 17986, Jun. 20, 1929 (SAPT); Maguntan <57-lower l.>, S. Sugawara, Jul. 8, 1930 (SAPS); Side of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI- 2 sheets); Mt. Tosso <57-lower l.>, S. Sugawara 17877, Jul. 18, 1935 (SAPT); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); 80km N of Dolinsk, Mt. Zidanko <57-lower l.>, N. Fujii 01094, Aug. 2, 2002 (MAK 340821); Mt. Kashipo <57-upper r.>, S. Sugawara 17876, Aug. 27, 1929 (SAPT); Kashipo, Nishiyama <57-upper r.>, H. Abumiya et al., Jul. 31, 1932 (SAPS); Shokuminchi at Kashipo <57-upper r.>, H. Abumiya & G. Takee, Aug. 8, 1932 (SAPS); Tomarioru <58-lower l.>, [no collector's name], Aug. 7, 1913 (TI- 3 sheets); Tomarioru <58-lower l.>, [no collector's name], Aug. 8, 1913 (TI); Manui <59-upper l.>, S. Komatsu 1370, Aug. 4, 1913 (TI); Higashishiraura <59-upper l.>, [no collector's name], Aug. 5, 1913 (TI); Manui-sando <59-upper l.>, [no collector's name], Aug. 6, 1913 (TI); Kitaitada <59-lower r.>, [no collector's name], Aug., 1913 (TI); W. Coast, Notasan <60-upper l.>, T.Miyake, Jun. 28, 1907 (SAPS); Mt. Kabuto-yama <61-lower l.>, S. Sugawara 17879, Jun. 6, 1935 (SAPT); Aihama <61-upper r.>, K. Kimura, Jul. 22, 1932 (KYO- 2 sheets); Toyohara-shicho, Aikawa, Experiment Forest of Tokyo Univ. <61-upper r.>, M. Honda & Y. Kimura, Aug. 11, 1940 (TI- 2 sheets); Fukakusa <61-lower r.>, S. Sugawara 17873, Sep. 2, 1922 (SAPT); Fukakusa <61-lower r.>, S. Sugawara 17882, Jul. 25, 1926 (SAPT); In viciniis opp. Dolinsk <62-lower l.>, A. Gizha et al., Jun. 22, 1953 (TNS); 30km N of Yuzhno-Sakhalinsk, Sokol <62-lower l.>, H. Takahashi 30035, Jul. 30, 2002 (SAPS); Around the mouth of Bakhura River <62-lower r.>, H. Takahashi 29134 & 29136, Jul. 19, 2001 (SAPS, 29134-TI); 20km SE of Dolinsk, Shuya River and Bakhura River <62-lower r.>, K. Inoue 8, Jul. 31, 2002 (SAPS); Honto, Mt. Inaho <63-lower l.?>, U. Kimoto et al., Aug. 18, 1931 (SAPS); Maoka <63-upper r.>, S. Sugawara 17874, Sep., 1938 (SAPT); Shimizu <64-upper l.>, T. Miyake, Jun. 30, 1906 (SAPS); Oomagari <64-upper r.>, T. Miyake, Jun. 30, 1906 (SAPS); Sekiguchi-toge <64-upper r.>, T. Miyake, Jun. 30, 1906 (SAPS); Ohsawa <65-upper l.>, [no collector's name], Aug. 1, 1913 (TI); Konuma <65-upper l.>, G. Koidzumi, Aug. 11, 1930 (KYO); Toyohara-gun, Toyokita-mura, Konuma <65-upper l.>, H. Sase, Aug. 15, 1937 (SAPS); Aniva Distr., prope Novo-Alexandrovsk <65-upper l.>, G. Proskuriakova & G. Porubinovskaia, Sep. 8, 1973 (MAK 209139, SAPT, TI); Peak Chekov (alt.1045 m) <65-upper l.>, T. Fukuda 1148 & 1173, Jul. 22, 2001 (SAPS); Vspenskoe <65-lower l.>, T. Miyake, Sep. 30, 1906 (SAPS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 27, 1907 (SAPS, TNS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 31, 1907 (SAPS); Mt. Ochopoka <65-upper r.>, T. Miyake, Jun. 13, 1908 (SAPS); Sussuja <65-upper r.>, S. Sugahara, Aug., 1928 (KYO); Side of Mt. Susuya <65-upper r.>, H. Hara, Aug. 13, 1928 (TI); Mt. Susuya (Suzuya) <65-upper r.>, S. Saito, Jul. 26, 1929 (TI- 2 sheets); Mt. Ochiho-yama <65-upper r.>, S. Sugawara, Aug. 3, 1929 (TI); Mt. Susuya <65-upper r.>, S. Sugawara 17881, Sep. 14, 1930 (SAPT); Mt. Ochiho-dake <65-upper r.>, S. Sugawara 17880, Aug. 25, 1931 (SAPT); Toyohara, upstream of Ohsawa <65-upper r.>, S. Kitamura, Jul. 11, 1942 (KYO); E. Coast, Omuto <66-lower l.>, T. Miyake, Jun. 10, 1908 (SAPS); Okhotskoe, Sedykh Lake <66-lower l.>, S. Noshiro et al. 970706-26, Jul. 6, 1997 (TI); Mt. Oyakochi <67-lower l.>,

T.Miyake, Jun. 25, 1908 (SAPS); Korssakoff <70-upper r.>, K. Miyabe & T. Miyagi, Aug. 4, 1906 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, T. Miyake, May 26, 1907 (SAPS); Otomari <70-upper r.>, H. Hara, Jul. 28, 1936 (TI); Shibisani <71-upper l.>, G. Nakahara, Aug., 1906 (TNS); Tokushi <73-upper l.>, S. Sugawara 17965, Jun., 1929 (SAPT); Mt. Shiretoko Juzozan <74-upper l.>, T. Miyake, Jul. 11, 1908 (SAPS).

[No Locality]. S. Sakhalin, S. Komatsu 1383, Aug., 1913 (TI).

<THE KURILS>

NORTH. PARAMUSHIR <03>. [no locality], Yokoyama, 1908 (SAPS); Suribachi-wan, J. Ohwi & R. Yoshii 5347, Jul. 22, 1934 (KYO).

MIDDLE. URUP <19>. Tokotan, M. Tatewaki 10122, Sep. 8, 1927 (SAPS); Kobune, M. Tatewaki 17193, May 18, 1930 (SAPS); Barhatnyy Bay, N. Tsurusaki, Aug. 28, 1995 (SAPS); Negodnaya Bay, N. Tsurusaki, Aug. 29, 1995 (SAPS); Negodnaya Bay, H. Takahashi 20147, Aug. 29, 1995 (SAPS); Ukromnaya Bay, H. Takahashi 22192, Aug. 20, 1996 (SAPS); Tetvayeva Bay, H. Takahashi 28634, Aug. 8, 2000 (SAPS).

SOUTH. ITURUP <20>. Rubetsu, S. Yokoyama, Aug. 23, 1893 (SAPS); Toshiruri, K. Fukuzawa, Sep.2, 1893 (SAPS- 2 sheets); Mt. Moyoro-yama, T. Kawakami 196, Aug. 12, 1898 (SAPS); Shibetoro, K. Miura, Jul. 19, 1906 (SAPS); Shana–Bettobi, K. Kondo, Jul. 13, 1927 (TI); Shamanbe, K. Kondo 1912, Jul. 14-15, 1927 (TI- 2 sheets); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI); Sokiya–Shibetoru, S. Saito 3878, Aug. 8, 1928 (MAK 331507, TI- total? 3 sheets); Oyachi, S. Saito, Aug. 11, 1928 (TI- 2 sheets); Shibetoro–Moyoro, B. Yoshimura & H. Yokoyama, Aug. 2, 1938 (SAPS); Mt. Moyoro-yama, B. Yoshimura & H. Yokoyama, Aug. 4, 1938 (SAPS); Rubetsu vill., from mouth of Naibo River to Lake Naibo, T. Azuma et al. 3208, Jun. 18, 2002 (SAPT); Shana vill., near wetland of Yanketou, T. Azuma et al. 3291, Jun. 24, 2002 (SAPT). KUNASHIR <21>. [no locality], [no collector's name], 1935 (KYO); Mt. Iwo-zan, Y. Matsumura, Jul. 24, 1930 (KYO- 2 sheets). SHIKOTAN <22>. Mt. Shakotan, S. Saito, Aug. 30, 1925 (TI); Shakotan, K. Kondo, Aug. 4, 1929 (TI); Masuba–Notoro, K. Kondo, Sep. 3, 1929 (TI).

27. Vaccinium oxycoccus L. [Tsuru-kokemomo]

<SAKHALIN>

NORTH. Near Pilew, lakeside <04-lower r.>, Y. Kudo & B. Ishida 7127, Aug. 25, 1923 (SAPS); Pomeri–Moskariwo, Takada-shokai, on the peat <06-lower r.>, Y. Kudo & B. Ishida 7339, Aug. 31, 1923 (SAPS); SW of the Gulf of Pomr', ca 2 Km NW from Moskaljvo <06-lower r.>, T. Fukuda 2028, Aug. 13, 2001 (SAPS); N end of the Gulf of Pomr'. Village Muzjma <07-upper l.>, T. Fukuda 1898, Aug. 10, 2001 (SAPS); Oha <07-lower r.>, Okada, Sep. 3, 1923 (TI); Wisk, near winter house <09-upper l.>, Y. Kudo & B. Ishida 7393, Sep. 2, 1923 (SAPS); Okha Region, Ekhabi Bay <11-upper l.>, V. Y. Barkalov 10061, Aug. 3, 2001 (SAPS): E of Gulf of Piltun, Vstrechnaya <11-upper l.>, T. Fukuda 1568, Aug. 4, 2001 (SAPS); Seacoast of Chaio <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, tundra prope litus <23-lower l.>, Y. Kudo & M. Tatewaki 6533, Aug. 13, 1922 (SAPS); Parukata, tundra <26-upper r.>, Y. Kudo & M. Tatewaki 6430, Aug. 10, 1922 (SAPS).

MIDDLE. Ako, tundra <28-lower l.>, Y. Kudo & M. Tatewaki 6099, Jul. 26, 1922 (SAPS); Hantusa <37-lower r.>, Okada, Aug. 30, 1923 (TI); Shisuka-shicho, Chirie-gun, Chirikoro <45-upper r.>, M. Tatewaki & Y. Takahashi 22923, Jun. 28, 1936 (SAPS); Shisuka-shicho, Shibunkoro <45-lower r.>, Y. Hoshino et al., Aug. 4, 1933 (SAPS); E. Coast, Ehorokofunai <48-lower l.>, T. Miyake, Aug. 11, 1906 (SAPS); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS); Nairo <48-lower l.>, S. Sugawara 17663, Jul., 1934 (SAPT); Nairo, Ueshiba <48-lower l.>, K. Washimi, Jun. 10, 1937 (KYO); Ramotteiuri <48-upper r.>, T. Miyake, Aug. 15, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Shikka <48-upper r.>, I. Namikawa, Sep. 8, 1914 (SAPS); E. Coast, Shikka <48-upper r.>, Y. Hada, Jul. 15, 1929 (SAPS); Shisuka <48-upper r.>, H. Ohtani & Y. Imai, Jul. 20, 1930 [29?] (SAPS); Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Horonai River, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Shisuka <48-upper r.>, B. Yoshimura & M. Hara 3, Jul. 9, 1937 (TNS); Taraika <49-upper r.>, S. Sugawara 17661, Aug. 10, 1927 (SAPT); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1940 (TI- 2 sheets); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS); Lak. Solenuiya <51-lower r.>, K. Miyabe & T. Miyagi, Jul. 26, 1906 (SAPS); Kitashiretoko Peninsula, Funakoshi <51-lower r.>, Y. Hoshino et al., Jul. 24, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 19, 1933 (SAPS).

SOUTH. Maguntan <57-lower l.>, S. Saito 994, Aug. 5, 1929 (TI); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura Aug. 12, 1940 (TI); W. Coast, Kusunnai <58-upper r.>, T. Miyake, Jul. 7, 1906 (SAPS); E. Coast, Shiraraka <59-upper l.>, T. Miyake, Jul. 9, 1906 (SAPS); Odasamu <59-lower l.>, S. Otagiri, Jul. 1, 1930 (KYO, mingled with *V. microcarpum*); Odasamu <59-lower l.>, K. Sato, Jul., 1941 (TI); W. Coast, Tokotan <60-lower l.>, T. Miyake, Jun. 22, 1907 (SAPS); Fukakusa <61-lower r.>, S. Sugawara 17669 & 17670, Aug. 10, 1921 (SAPT, f. *oblongicarpus*); Fukakusa <61-lower r.>, S. Sugawara 17662, Aug. 19, 1921 (SAPT); Toyohara, Fukakusa <61-lower r.>, S. Sugawara, Sep. 11, 1925 (SAPS); Dobki <62-upper l.>, G. Nakahara, Jun. 24, 1906 (TI); Dubki <62-upper l.>, K. Miyabe & T. Miyagi, Jul. 22, 1906 (SAPS); E. Coast, Dubki <62-upper l.>, T. Miyake, Sep. 26, 1906 (SAPS); Sakaehama <62-upper l.>, [no collector's name] (S. Komatsu) 1378, Aug. 2, 1913 (TI- 2 sheets); Sakaihama <62-upper l.>, S. Saito 395, Jul. 29, 1929 (TI- 2 sheets); Sakaehama <62-upper l.>, G. Koidzumi, Aug., 1930 (KYO); Near the mouth of r. Naiba, Lake Lebyazhie <62-upper l.>, T. Fukuda 1224, Jul. 23, 2001 (SAPS); Kurokawa <62-lower l.>, S. Sugawara 17664, Aug. 19, 1922 (SAPT); Kurokawa <62-lower l.>, S. Sugawara, Jul. 3, 1927 (TI); Kurokawa mire <62-lower l.>, H. Hara, Jul. 31, 1931 (TI); 6km W of Sokol town, environs surrounding Mal Takoy River <62-lower l.>, H. Takahashi 29184, Jul. 20, 2001 (SAPS); W. Coast, Uentomari <63-upper r.>, T. Miyake, Jun. 22, 1907 (SAPS); Soriofka <65-lower l.>, U. Faurie, Sep. 2, 1908 (KYO); Kaizuka <65-lower l.>, K. Numajiri, Jul., 1924 (TNS); Kaizuka, peatland <65-lower l.>, H. Hara, Aug. 17, 1928 (TI); Kaizuka <65-lower l.>, S. Sugawara, Aug. 30, 1940 (TI); Okhotskoe, Sedykh Lake <66-lower l.>, S. Tsuji et al. 803010, Aug. 3, 1996 (TI); Okhotskoe, Sedykh Lake <66-lower l.>, S. Noshiro et al. 970706-53, Jul.

6, 1997 (TI); Near Korsakov, mire <70-upper r.>, H. Ueda, Oct. 14, 1905 (SAPS); 10km E of Korsakov, N of Prigordnoye <70-upper r.>, H. Takahashi 29424, Jul. 28, 2001 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 17, 1908 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 20, 1908 (SAPS); Aniwa Bay, Arakuri <71-upper r.>, T. Miyake, Jul. 18, 1908 (SAPS); Nagahama-gun, Tobuchi-mura <71-upper r.>, H. Sase, Sep. 8, 1935 (SAPS); Arakul River, Ozerskiy–Beregoboy <71-upper r.>, N. Fujii 01404, Aug. 15, 2002 (MAK 346252, SAPS); Nagahama-gun, Tobuchi-mura, Tobuchi-sawa <72-upper l.>, H. Sase, Jun. 24, 1933 (SAPS).

[No locality]. Komatu, 1909 (TI- 4 sheets); Komatsu, [no date] (TI- 2 sheets).

<THE KURILS>

NORTH. SHUMSHU <02>. Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5601, Jul. 28, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23405, Aug. 8, 1997 (SAPS); S of Pochtareva Cape, Y. Kuwahara 150, Aug. 8, 1997 (SAPS). PARAMUSHIR <03>. Murakamiwan, Y. Kudo 4982, Jul. 4, 1920 (SAPS); Murakamiwan,Y. Kudo 4992, Jul. 6, 1920 (SAPS); Murakamiwan, Y. Kudo 5456, Jul. 23, 1920 (SAPS); Ruesan, Y. Kudo 5674, Aug. 5, 1920 (SAPS); Tomarizaki, Y. Kudo 5739, Aug. 7, 1920 (SAPS); Murakamiwan, M. Tatewaki 17243, May 29, 1930 (SAPS); Arakawa, J. Ohwi & R. Yoshii 208, Jul. 10, 1934 (KYO); Murakami-wan, J. Ohwi & R. Yoshii 5914, Aug. 1, 1934 (KYO); Raisha, J. Ohwi & R. Yoshii 5998, Aug. 6, 1934 (KYO); Vasil'yeva Bay, Y. Kuwahara, Aug. 3, 1996 (SAPS); Severo-Kurilsk, Utiosnaya Bay, V. Y. Barkalov 97068, Jul. 13, 1997 (SAPS); S of Savushkina Cape, Y. Kuwahara 116, Aug. 4, 1997 (SAPS).

MIDDLE. SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21776, Aug. 12, 1996 (SAPS); Zakatnaya Bay, H. Takahashi 28255, Jul. 29, 2000 (SAPS). RASSHUA <13>. Onuma, M. Tatewaki & K. Takahashi 15166, Aug. 5, 1929 (SAPS); Mt. Chotozan, M. Tatewaki & K. Takahashi 15126, Aug. 5, 1929 (SAPS); Yoriki-hama, H. Takahashi 19257 & 19267, Aug. 13, 1995 (SAPS- 2 sheets). KETOI <15>. Kodakigawa, M. Tatewaki & K. Takahashi 15274, Aug. 15, 1929 (SAPS); Isozaki, M. Tatewaki & K. Takahashi 15578, Aug. 24, 1929 (SAPS). SIMUSHIR <16>. Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11808, Aug. 16, 1928 (SAPS); Wanoku, M. Tatewaki (& Y. Tokunaga) 12057 & 12058, Aug. 25, 1928 (SAPS- 2 sheets); Broughton Bay, M. Tatewaki & K. Takahashi 16006, Jul. 26, 1929 (SAPS). URUP <19>. Yoroigawa, M. Tatewaki 9960, Sep. 6, 1927 (SAPS); NE of Van-Der Lind, H. Takahashi 20038, Aug. 26, 1995 (SAPS); NE of Van-Der Lind, H. Takahashi 20064, Aug. 26, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20115, Aug. 28, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20127, Aug. 28, 1995 (SAPS).

SOUTH. ITURUP <20>. Mt. Atoiya, T. Kawakami 193, Aug. 11, 1898 (SAPS); Shibetoru, K. Miura, Jul., 1906 (SAPS); Bettofu, K. Miura, Jul. 16, 1906 (SAPS); Shibetoro, K. Miura, Jul. 19, 1906 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Shana-ko, K. Kondo, Jul. 11, 1927 (TI- 2 sheets); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI- 2 sheets); Oyachi, S. Saito 3855, Aug. 11, 1928 (MAK 331508, TI- 3 sheets); Bettobi, S. Saito, Aug. 17, 1928 (TI- 2 sheets); Moyoro–Shibetoro, B. Yoshimura & H. Yokoyama, Aug. 5, 1938 (SAPS); Tannemoe, Chishima-chosasyo, Aug. 30, [no year; prob. 1939] (SAPS); Rubetsu vill., from mouth of Naibo River to Iriribushi, T. Azuma et al. 3279, Jun. 19, 2002 (SAPT); Shana vill., near wetland of Yanketou, T. Azuma et al. 3304, Jun. 24, 2002 (SAPT). KUNASHIR <21>. Furukamappu, C. Endo, Sep. 17, 1894 (SAPS); Seseki, M. Tatewaki 3013, Jul. 20, 1923 (SAPS, SAPT); Furukamappu, M. Tatewaki 3402, Jul. 26, 1923 (SAPS); Furukamappu, J. Ohwi, Aug. 12, 1923 (TNS); Furukamappu–Nikishiro, Y. Matsumura, Jul. 21, 1930 (KYO); [no locality], [no collector's name], 1935 (KYO); Tomari, M. Tatewaki 25370, Aug. 17, 1936 (SAPS); Zenbekotan, M. Tatewaki 25684, Aug. 22, 1936 (SAPS); Furukamappu mire, S of Furukamappunuma-pond, H. Fujita et al. 03-0019, Jul. 13, 2003 (SAPT). SHIKOTAN <22>. (Shakotan–Chipoi) [no locality], [no collector's name] (H. Takeda), Jul. 18, 1909 (SAPS, TNS 29727); Nodoro–Inemoshiri, S. Saito 1601, Sep. 6, 1925 (TI); Aburakowan, K. Kondo, Sep. 6, 1929 (TI); Poropet–Shakotan, J. Ohwi, Jul. 30, 1931 (KYO); Notoro, J. Ohwi 762, Aug. 9, 1931 (SAPS); Notoro Riv., J. Ohwi, Aug. 9, 1931 (KYO); Notoro, J. Ohwi, Aug. 11, 1931 (KYO); Toiro, M. Tatewaki 20571, Jun. 20, 1934 (SAPS); Shikotan-matsuhara, M. Tatewaki 20649, Jun. 22, 1934 (SAPS); Shikotan-matsuhara, D. Akaishi 20886, Jun. 29, 1934 (SAPS); Syakotan, Kiritoshi, S. T. Ono, Jul. 10, 1934 (TI).

28. Vaccinium praestans Lamb.[Iwa-tsutsuji]

<SAKHALIN>

NORTH. Near Pilevo, forests <04-lower r.>, Y. Kudo & B. Ishida 7120, Aug. 25, 1923 (SAPS); Pupuni, in sylvis <26-lower l.>, Y. Kudo & M. Tatewaki 6357, Aug. 8, 1922 (SAPS).

MIDDLE. Dui, mountain <28-lower l.>, H. Ueda, Sep. 1, 1905 (SAPS); Ako–tundra <28-lower l.>, Y. Kudo & M. Tatewaki 6098, Jul. 26, 1922 (SAPS); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Kita Nayoshi <41-lower l.>, K. Kawai & M. Tokunaga, Aug. 28, 1929 (SAPS); Shisuka-shicho, Ikeda–Takada-jimusyo <44-upper r.>, B. Yoshimura & M. Hara, Jul. 13, 1937 (SAPS); Shisuka-gun, Ikeda <44-upper r.>, B. Yoshimura & M. Hara 74, Jul. 13, 1937 (TNS); Shisuka-shicho, Chirie-gun, Chirikoro <45-upper r.>, M. Tatewaki & Y. Takahashi 22922, Jun. 28, 1936 (SAPS); E. Coast, Nayoro <48-lower l.>, K. Miyabe & T. Miyagi, Jul. 28, 1906 (SAPS); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS); Nayoro <48-lower l.>, I. Namikawa, Aug. 13, 1914 (SAPS); Kusunokisawa [Kusunokiyama?], Experiment Forest of Kyoto Univ. <48-lower l.>, Y. Kobayashi, Jul. 18, 1928 (TNS); Jimutaki <50-upper r.>, K. Miyabe & T. Miyagi, Jul. 24, 1906 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 12, 1933 (SAPS); Mt. Isara-yama <52-lower l.>, S. Sugawara 17902, Aug. 17, 1933 (SAPT).

SOUTH. Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); 80km N of Dolinsk, Mt. Zidanko <57-lower l.>, N. Fujii 01114, Aug. 2, 2002 (MAK 341826); Kashipo, Nakano-dake <57-upper r.>, H. Abumiya et al., Jul. 27, 1932 (SAPS); Kashipo, Kashipo-dake <57-upper r.>, H. Abumiya & G. Takee, Aug. 5, 1932 (SAPS); E. Coast, Manue <59-upper l.>, T. Miyake, Sep. 17, 1907 (SAPS); Manui <59-upper l.>, [no collector's name], Aug. 6, 1913 (TI); Manui <59-upper l.>, S. Komatsu, Aug. 4, 1914 (TI); Odasamu <59-lower l.>, [no collector's name], Aug. 4, 1913 (TI- 2 sheets); W. Coast, Tokotan <60-lower l.>, T. Miyake, Jun. 22, 1907 (SAPS); Aihama <61-upper r.>, K. Kimura, Jul. 22, 1932

(KYO); Aihama-mura, Experiment Forest of Tokyo Univ. <61-upper r.>, R. Imaseki, Jul. 13, 1941 (TNS); Fukakusa <61-lower r.>, S. Sugawara 17901, Jul. 11, 1922 (SAPT); Sakaehama <62-upper l.>, (S. Komatsu) [no collector's name], Aug. 2, 1913 (TI- 3 sheets); Sakaihama <62-upper l.>, S. Saito 3672, Jul. 29, 1929 (TI- 2 sheets); In viciniis opp. Dolinsk <62-lower l.>, A. Czernjaeva, Jul. 14, 1953 (TNS); Chinehira <63-lower l.>, [no collector's name], Aug. 11, 1913 (TI); Vladimirohuka <65-upper l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Prope urbis Novo-Alexandrovsk <65-upper l.>, E. Egorova et al., Aug. 9, 1973 (TI); Vspenskoe <65-lower l.>, T. Miyake, Sep. 30, 1906 (SAPS); Kaizuka <65-lower l.>, H. Hara, Aug. 17, 1928 (TI); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 27, 1907 (SAPS); Yuzhno-Sakhalinsk, Mt. Moskovskaya, alt.540m <65-upper r.>, S. Noshiro et al. 970707-10, Jul. 7, 1997 (TI); Tonnaichya-sando <65-lower r.>, T. Miyake, Oct. 10, 1906 (SAPS); Tonnai <66-lower l.>, K. Numajiri, Aug. 15, 1925 (TNS); NE of Lake Tunaycha, NE of Lake Khvalisekoye <66-lower r.>, T. Fukuda 1372, Jul. 29, 2001 (SAPS); Ozerskiy, S of the Lake Mal. Chibisanskoye <71-upper l.>, T. Fukuda 1364, Jul. 28, 2001 (SAPS); Ozerskiy, Lake Mal. Chibisanskoye <71-upper l.>, H. Takahashi 29458, Jul. 28, 2001 (SAPS); Nagahama-gun, Tobuchi-mura, school forest <71-upper r.>, H. Sase, Jun. 29, 1935 (SAPS); Nagahama-gun, Tobuchi-mura, school forest <71-upper r.>, H. Sase, Sep. 14, 1935 (SAPS); Mt. Omanbetsu <72-lower l.>, T. Miyake, Jul. 15, 1908 (SAPS); Cape Notoro <73-lower l.>, K. Miyabe & T. Miyagi, Jul. 19, 1906 (SAPS); Todomoshiri, Dainan-wan <73-lower l.>, T. Miyake, Jul. 23, 1906 (SAPS); Kaiba Isl. <73-lower l.>, S. Komat, Aug. 12, 1915 (TI); Ins. Kaiba <73-lower l.>, S. Saito, Jul. 19, 1929 (TI- 2 sheets); Kaiba Isl. <73-lower l.>, S. Sugawara 17899, Sep., 1934 (SAPT); Mt. Shiretoko-Juzozan <74-upper l.>, T. Miyake, Jul. 11, 1908 (SAPS).

[No Locality]. G. Nakahara, 1906 (TI); Komatsu, 1909 (TI); [no collector's name], Aug. [?], 1935 (MAK 105542).

<THE KURILS>

MIDDLE. KETOI <15>. Minamiura, M. Tatewaki & K. Takahashi 15777, Jul. 28, 1929 (SAPS); Kodakigawa, M. Tatewaki & K. Takahashi 15262, Aug. 15, 1929 (SAPS). SIMUSHIR <16>. Nakadomari, M. Tatewaki & K. Takahashi 15997, Jul. 25, 1929 (SAPS); Malaya Bay, H. Takahashi 19545, Aug. 18, 1995 (SAPS). URUP <19>. Kobune, M. Tatewaki 9839, Aug. 26, 1927 (SAPS); Tokotan, M. Tatewaki 9646, Aug. 29, 1927 (SAPS); W from Tokotan, M. Tatewaki 9968, Sep. 3, 1927 (SAPS); Otkrytyy Bay, H. Takahashi 18550, Aug. 5, 1995 (SAPS); Ukromnaya Bay, H. Takahashi 22151, Aug. 20, 1996 (SAPS).

SOUTH. ITURUP <20>. Furebetsu, K. Miyabe, Jul. 28, 1884 (SAPS); Furebetsu, Y. Tanaka,Aug.27, 1895 (SAPS); Shibetoro, T. Kawakami 161, Aug. 9, 1898 (SAPS); Naibo, T. Kawakami 282, Sep. 5, 1898 (SAPS); Shibetoro, K. Miura, Jul. 19, 1906 (SAPS); Shibetoro, K. Miura, Jul. 21, 1906 (SAPS-2 sheets); Shimo-naibo, K. Miura, Jul. 23, 1906 (SAPS); Toro, K. Miura, Jul. 24, 1906 (SAPS); Shana, A. Abe, Aug., 1924 (TNS 514034); Sokiya–Shibetoru, K. Kondo, Jul. 19, 1927 (TI); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI- 2 sheets); Bettobi–Porosu, S. Saito, Aug. 6, 1928 (TI); Porosu–Sokiya, S. Saito, Aug. 7, 1928 (TI); Oyachi, S. Saito, Aug. 11, 1928 (TI); Shana–Bettobi, B. Yoshimura, Aug. 13, 1937 (SAPS); Moyoro, Chishima-chosasyo, Sep. 16, [no year; prob. 1939] (SAPS). KUNASHIR <21>. Chikkaribetsu, Shozunai, C. Endo, Aug. 5, 1894 (SAPS); Tomari-mura, S. Sasa, Jul. 9, 1908 (SAPS); Seseki, M. Tatewaki 3091, Jul. 20, 1923 (SAPS); Kaikaramui, M. Tatewaki 3205, Jul. 22, 1923 (SAPS); Mt. Rausu, M. Tatewaki 3688, Jul. 23, 1923 (SAPS); Near River Onnebetsu, K. Kondo, Jul. 26, 1929 (TI- 2 sheets); Furukamappu–Nikishiro, Y. Matsumura, Jul. 21, 1930 (KYO); Nikisyoro Lake, Y. Matsumura, Jul. 22, 1930 (KYO); Mt. Tomari, M. Tatewaki 25519, Aug. 20, 1936 (SAPS); [no locality], [no collector's name], 1935 (KYO); [no locality], Nagato, Aug., 1930 (TI). SHIKOTAN <22>. Shakotan, K. Miyabe, Jul. 27, 1884 (SAPS); Shakotan, K. Miura, Jul. 26, 1906 (SAPS); (Chipoi) [no locality], [no collector's name] (H. Takeda), Jul. 18, 1909 (SAPS, TNS); Shakotan, G. Tanaka & Ken. Miyabe, Aug. 9, 1910 (SAPS); Anama, G. Tanaka & Ken. Miyabe, Aug. 14, 1910 (SAPS); Anama, M. Arai, Aug. 15, 1910 (SAPS); Shakotan, Nodoro–Inemoshiri, S. Saito 1599, Sep. 6, 1925 (TI); Cape Shakotan, K. Kondo, Aug. 4, 1929 (TI); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI); Anama, K. Kondo, Aug. 28, 1929 (TI); Mt. Tomari, K. Kondo, Sep. 5, 1929 (TI); Shakotan, S. T. Ono, Jun. 29, 1930 (SAPT); Matakotan, J. Ohwi, Jul. 19, 1931 (KYO); Kagenoma, J. Ohwi, Aug. 4, 1931 (KYO); Umanose, A. Kimura, Aug. 15, 1933 (SAPS); Shikotan-matsuhara, M. Tatewaki, Jun. 19, 1934 (SAPS); Shakotan-yama, M. Tatewaki 20794, Jun. 29, 1934 (SAPS); Shakotan, S. T. Ono, [no date] (SAPS); [no locality], K. Numajiri, [no date] (TNS).

[Island Uncertain]. G. Toba 588, Jun. 20, 1930 (TI).

29. **Vaccinium smallii** A.Gray [Ôba-sunoki] <SAKHALIN>

MIDDLE. Adatuim <29-upper l.>, Okada, Aug. 23, 1923 (TI); 35-40km E of Kirovskoye, N of Chamginskiy pass <34-upper r.>, N. Fujii 01220, Aug. 8, 2002 (MAK 346157, SAPS); W. Coast, Anbetsu <36-lower l.>, T. Ishiyama, Jul. 16, 1927 (SAPS); Anbetsu <36-lower l.>, S. Sugawara 17915, Aug. 13, 1933 (SAPT); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Mt. Okada-yama <39-lower l.>, S. Sugawara 17909, Aug. 10, 1938 (SAPT); Eastern border, Asase <40-lower l.>, Y. Hoshino et al., Aug. 11, 1933 (SAPS); Saren <40-lower r.>, S. Sugawara 17916, Aug. 4, 1935 (SAPT); Shisuka-gun, Hoe-mura <42-lower r.>, [no collector's name], Aug. 20, 1929 (KYO); Mt. Horoto-yama <42-lower r.>, S. Sugawara 17906, Aug. 25, 1931 (SAPT); Vicinity of R. Wuruna <43-lower l.>, T. Miyake, Aug. 22, 1906 (SAPS); Shisuka-shicho, Yamahana–Ikeda <44-lower r.>, B. Yoshimura & M. Hara, Jul. 12, 1937 (SAPS); Mt. Kawashima-yama <45-upper r.>, S. Sugawara 17908, Aug. 3, 1935 (SAPT); Nayoshi-gun, Kitaozawa <46-upper l.>, M. Henmi, Jul. 12, 1945 (TNS); Kitaozawa <46-upper l.>, M. Henmi, Jul. 21, 1945 (TNS); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS); Nayoro <48-lower l.>, I. Namikawa, Aug. 13, 1914 (SAPS); Kusunokiyama, Experiment Forest of Kyoto Univ. <48-lower l.>, T. Chono, Jul. 21, 1928 (TNS); Kusunokiyama, Experiment Forest of Kyoto Univ. <48-lower l.>, T. Koshima, Jul. 21, 1928 (TNS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 27, 1933 (SAPS); Kitashiretoko, Mt. Kashoku-yama <51-lower l.>, S. Sugawara 17913, Jul. 22, 1935 (SAPT); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 31, 1907 (SAPS); E. Coast, Ponkotan <54->, T. Miyake, Sep. 13, 1906 (SAPS);

E. Coast, Shirutoru <54-lower l.>, T. Miyake, Sep. 13, 1909 (SAPS); Shiritoru <54-lower l.>, S. Sugawara 17907, Aug. 2, 1927 (SAPT); Minami-niitoi <54-upper r.?>, H. Hara, Aug. 4, 1931 (TI); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS).

SOUTH. Mihama-mura, Lake Shosen [?] <56->, H. Hara, Jul. 30, 1936 (TI); E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Nupuripo <57-lower l.>, S. Saito, Aug. 3, 1929 (TI); Upper part of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); Side of Mt. Tosso <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); Mt. Tosso <57-lower l.>, J. Ohwi, Jul. 22, 1932 (KYO); Mt. Tosso <57-lower l.>, S. Sugawara 17911, Jul. 18, 1935 (SAPT); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI); 80km N of Dolinsk, Mt. Zhdanko <57-lower l.>, H. Takahashi 30151, Aug. 2, 2002 (SAPS); Mt. Kashipo <57-upper r.>, S. Sugawara 17914, Aug. 27, 1929 (SAPT); Kashipo, Kashipo-dake <57-upper r.>, H. Abumiya et al., Jul. 22, 1932 (SAPS); Kashipo, Nishiyama <57-upper r.>, H. Abumiya & G. Takee, Aug. 4, 1932 (SAPS); Tomarioru <58-lower l.>, [no collector's name], Aug. 8, 1913 (TI); Kusunnai <58-upper r.>, K. Miyabe & T. Miyagi, Aug. 9, 1906 (SAPS); Ware <59-upper l.>, K. Miyabe & T. Miyagi, Jul. 29, 1906 (SAPS); E. Coast, Shiraraka <59-upper l.>, T. Miyake, Sep. 20, 1907 (SAPS); Manui <59-upper l.>, S. Komatsu, Aug. 3, 1913 (TI); Higashishiraura <59-upper l.>, [no collector's name], Aug. 5, 1913 (TI); Manui–Nayoro <59-upper l.>, S. Komatsu, Aug. 6, 1913 (TI); Shiraura <59-upper l.>, S. Sugawara 17964, Aug. 20, 1930 (SAPT); Kitaitada <59-lower r.>, [no collector's name], Aug. 4, 1913 (TI- 3 sheets); W. Coast, Notasan <60-upper l.>, T. Miyake, Jun. 29, 1907 (SAPS); W. Coast, Tokotan <60-lower l.>, T. Miyake, Jun. 22, 1907 (SAPS); Aikawa, Experiment Forest of Tokyo Univ. <61-upper r.>, S. Otagiri, Jul. 3, 1927 (TI); Experiment Forest of Tokyo Univ. <61-upper r.>, S. Otagiri, Aug. 7, 1928 (TI- 2 sheets); Aikawa, Experiment Forest of Tokyo Univ. <61-upper r.>, S. Otagiri, Sep. 10, 1928 (TI); Aihama-mura, Experiment Forest of Tokyo Univ. <61-upper r.>, R. Imaseki, Jul. 13, 1941 (TNS); Fukakusa (Kawakita) <61-lower r.>, S. Sugawara, May 20, 1922 (SAPS); Fukakusa <61-lower r.>, S. Sugawara, Jun., 1923 (TI); Dubki <62-upper l.>, K. Miyabe & T. Miyagi, Jul. 22, 1906 (SAPS); Sakaehama, seacoast <62-upper l.>, S. Otagiri, Jul. 5, 1928 (TI); Sakaihama <62-upper l.>, S. Saito 3674, Jul. 29, 1929 (TI- 2 sheets); Mt. Ochiai-yama <62-lower l.>, S. Sugawara 17910, Jul. 25, 1926 (SAPT); Kurokawa <62-lower l.>, H. Hara, Jul. 31, 1931 (TI); In viciniis opp. Dolinsk <62-lower l.>, A. Czernajeva, Jul. 11, 1953 (TNS); 20km E of Sokol town, mouth of Bakhura River <62-lower r.>, H. Takahashi 29137, Jul. 19, 2001 (SAPS); 20km SE of Dolinsk, Shuya River <62-lower r.>, H. Takahashi 30138, Jul. 31, 2002 (SAPS); Toyohara <65-upper l.>, H. Hara, Jul. 30, 1931 (TI); Prope Novo-Alexandrovsk <65-upper l.>, G. Proskuriakova & G. Porubinovskaia, Sep. 5, 1973 (SAPT, TI); Mituryohuka <65-lower l.>, G. Nakahara, Jun., 1906 (TI); Vspenskoe <65-lower l.>, T. Miyake, Sep. 30, 1906 (SAPS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 27, 1907 (SAPS); Mt. Susuya <65-upper r.>, S. Sugawara 17905, Sep. 14, 1930 (SAPT); Peak Chekhov, along the pass <65-upper r.>, T. Fukuda 1174, Jul. 22, 2001 (SAPS); Tonnaichya-Sando <65-lower r.>, T. Miyake, Oct. 9, 1906 (SAPS); Sedykh Lake <66-lower l.>, S. Tsuji et al. 805004 & 805007, Aug. 5, 1996 (TI- 3 sheets); Okhotskoe, Boilj Peninsula–Sedykh Lake <66-lower l.>, S. Noshiro et al. 970706-61, Jul. 6, 1997 (TI); 30 Km SE of Yuzhno-Sakhalinsk, S of Okhotskoye <66-lower l.>, H. Takahashi 27894, Jul. 19, 2000 (SAPS); Aniwa Distr., Urym–Bachinskaya Rivers <69-upper r.>, S. Noshiro et al. 970703-36, Jul. 3, 1997 (TI); Mereya <70-upper r.>, K. Miyabe et al., Jul. 14, 1906 (SAPS); Korssakoff <70-upper r.>, K. Miyabe & T. Miyagi, Aug. 24, 1906 (SAPS); Near Otomari <70-upper r.>, H. Koidzumi Herbarium, Aug., 1925 (TNS); Chipisani <71-upper l.>, K. Miyabe et al., Jul. 15, 1906 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 17, 1908 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 19, 1908 (SAPS); Mt. Otairenko <71-upper l.>, T. Miyake, Jul. 22, 1908 (SAPS); Nagahama-gun, Tobuchi-mura, school forest <71-upper r.>, H. Sase, Jul. 8, 1934 (SAPS); Mt. Omanbetsu <72-lower l.>, T. Miyake, Jul. 15, 1908 (SAPS); Kaiba Isl. <73-lower l.>, S. Sugawara 17912, Jun. 25, 1933 (SAPT).

<THE KURILS>

SOUTH. ITURUP <20>. Furubetsu, K. Miyabe, Jul. 28, 1884 (SAPS); Arimoi Nobori, K. Miyabe, Jul.29, 1884 (SAPS); Shibetoro, T. Kawakami 98, Aug. 9, 1898 (SAPS); Bettobu–Shamanbe, K. Miura, Jul. 13-14, 1906 (SAPS- 2 sheets); Shibetoro, K. Miura, Jul. 19, 1906 (SAPS); Shibetoro, K. Miura, Jul. 21, 1906 (SAPS- 2 sheets); Mt. Moyoro, G. Tanaka & Ken. Miyabe, Jul. 17, 1910 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Moyoro coast, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); [no locality], K. Kondo 9998, Jul. 14-15, 1927 (TI); Shamanbe, K. Kondo, Jul. 14-15, 1927 (TI); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI); Sokiya–Shibetoru, S. Saito, Aug. 8, 1928 (TI); Oyachi, S. Saito 3596, Aug. 11, 1928 (TI- 3 sheets); Shana–Sashiusu, S. Saito, Aug. 20-22, 1928 (TI- 3 sheets); Shana vill., near wetland of Yanketou, T. Azuma et al. 3296, Jun. 24, 2002 (SAPT). KUNASHIR <21>. Tohutsu, Furukamappu, C. Endo, Sep. 17, 1894 (SAPS); Kaikaramui, M. Tatewaki 3245, Jul. 22, 1923 (SAPS); Mt. Rausu, M. Tatewaki 3278, Jul. 23, 1923 (SAPS); Furukamapp, M. Tatewaki 3400, Jul. 26, 1923 (SAPS- 2 sheets); [no locality], [no collector's name], 1935 (KYO).

30. **Vaccinium uliginosum** L. [Kuromamenoki]

<SAKHALIN>

NORTH. Near Pilewo, mountain <04-lower r.>, Y. Kudo & B. Ishida 4048, Aug. 24, 1923 (SAPS); Near Pilewo, *Larix* forests <04-lower r.>, Y. Kudo & B. Ishida 7099, Aug. 25, 1923 (SAPS); SW of the Gulf of Pomr', ca 2Km NW from Moskaljvo <06-lower r.>, T. Fukuda 2018, Aug. 13, 2001 (SAPS); Pirituk, dry peat <07-upper l.>, Y. Kudo & B. Ishida 7147, Aug. 28, 1923 (SAPS); N of the Gulf of Pomr', Village Muzjma <07-upper l.>, T. Fukuda 1943, Aug. 10, 2001 (SAPS); 15km S of Okha <10-upper r.>, H. Takahashi 31181, Jul. 28, 2003 (SAPS); E of Gulf of Piltun, Vstrechnaya <11-upper l.>, T. Fukuda 1518, Aug. 4, 2001 (SAPS); Chaio, seacoast <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nyiwo, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6466, Aug. 12, 1922 (SAPS); Nyiwo in arenosis litoralibus <23-lower l.>, Y. Kudo & M. Tatewaki 6514, Aug. 13, 1922 (SAPS); Nyiwo Tundra prope litus <23-lower l.>, Y. Kudo & M. Tatewaki 6534, Aug. 13, 1922 (SAPS); Nyiwo, Ins. Mobio, tundra <23-lower l.>, Y. Kudo & M. Tatewaki 6553, Aug. 14, 1922 (SAPS); Wieg–Katanguri, tundra <23-lower l.>,

Y. Kudo & M. Tatewaki 6570, Aug. 15, 1922 (SAPS); Pupni, tundra <26-lower l.>, Y. Kudo & M. Tatewaki 6366, Aug. 8, 1922 (SAPS); Parukata, tundra <26-upper r.>, Y. Kudo & M. Tatewaki 6432, Aug. 10, 1922 (SAPS); Parukata, in sylvis <26-upper r.>, Y. Kudo & M. Tatewaki 6453, Aug. 10, 1922 (SAPS); Palkata <26-upper r.>, Okada, Aug. 26, 1923 (TI- 2 sheets).

MIDDLE. Adatuim <29-upper l.>, Okada, Aug. 23, 1923 (TI); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS); Poronai-mura <37-lower r.>, T. Miyake, Aug. 29, 1906 (SAPS); Handa <37-lower r.>, S. Sugawara 17947, 17948, 17957 & 17958, Aug. 10, 1931 (SAPT- 4 sheets); 80km N of Poronaysk, Mirnyy–Pervomayskoye <38-lower l.>, H. Takahashi 30468, Aug. 10, 2002 (SAPS); 20km NE of Smirnykh, banks of the Poronay RAA Mirnyy <38-lower l.>, N. Fujii 01285, Aug. 10, 2002 (MAK 346158); Shisuka-shicho, Chirie-gun, Akaigawa River <39-lower r.>, M. Tatewaki & Y. Takahashi 23111, Jun. 26, 1936 (SAPS); Mitsuriofka, in turfosis <40-lower l.>, U. Faurie, Jul. 4, 1908 (SAPS); Keton, toward the border <42-upper r.>, J. Ohwi, Aug. 11, 1932 (KYO); Mt. Horoto-yama <42-lower r.>, Z. Tashiro, Sep. 3, 1939 (KYO); Mt. Kawashima-yama <45-upper r.>, S. Sugawara 17956, Aug. 3, 1935 (SAPT); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 22723, Jun. 21, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 23019, Jun. 29, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Naruko-Nirayama <45-upper r.?> M. Tatewaki & Y. Takahashi 22884, Jun. 26, 1936 (SAPS); Shikka Distr., Naruko (Nirayama) <45-upper r.?>, B. Yoshimura, Aug. 8, 1936 (SAPS- 2 sheets); Summit of Mt. Shisuka-dake <47-upper l.>, K. Washimi, Jul. 23, 1931 (KYO); Poronaysk–Leonidovo, moor <48-upper l.>, H. Takahashi 30533 & 30535, Aug. 13, 2002 (SAPS- 2 sheets); E. Coast, Ehorokofunai <48-lower l.>, T. Miyake, Aug. 11, 1906 (SAPS); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS); Tomarikishi, Experiment Forest of Kyoto Univ. <48-lower l.>, T. Chono, Jul. 16, 1928 (TNS); Shikka <48-upper r.>, T. Miyake, Aug., 1906 (SAPS); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Donida <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS); Shisuka <48-upper r.>, I. Namikawa, Aug. 12, 1914 (SAPS- 2 sheets); Siska <48-upper r.>, T. Sawada, Aug. 14, 1923 (TI); Shikka, tundra <48-upper r.>, H. Otani & Y. Imai, Jul. 20, 1930 (SAPS); Shisuka <48-upper r.>, G. Koidzumi, Aug. 17, 1930 (KYO); Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Downstream of Horonai River, tundra <48-upper r.>, H. Hara, Aug. 2, 1931 (TI); Shisuka <48-upper r.>, H. Tobita, Jul. 23, 1935 (KYO); Shisuka <48-upper r.>, R. Imaseki, Jul. 17, 1941 (TNS- 2 sheets); Tobani <48-upper r.?>, T. Miyake, Aug. 20, 1906 (SAPS); Taraika <49-upper l.>, T. Miyake, Aug. 14, 1906 (SAPS); W side of Taraika River <49-upper l.>, H. Hara, Aug. 3, 1931 (TI); Taraika <49-upper r.>, S. Sugawara 17945, Aug. 10, 1927 (SAPT); Shisuka-shicho, Taraika–Nimenjo <49-upper r.>, (B. Yoshimura &) M. Hara no number & 38, Jul. 10, 1937 (SAPS- 2 sheets, TNS); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 17, 1940 (TI); Jimutaki <50-upper r.>, K. Miyabe & T. Miyagi, Jul. 24, 1906 (SAPS); Shisuka-shicho, Nokoro <50-upper r.>, Y. Hoshino et al., Aug. 17, 1933 (SAPS); Shisuka-shicho, Motomari <51-upper l.>, Y. Hoshino et al., Aug. 3, 1933 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 27, 1933 (SAPS); Kitashiretoko Peninsula, Naifuto <51-lower l.>, Y. Hoshino et al., Jul. 30, 1933 (SAPS); Lak. Solenuiya <51-lower r.>, K. Miyabe & T. Miyagi, Jul. 26, 1906 (SAPS); Kitashiretoko Peninsula, Funakoshi <51-lower r.>, Y. Hoshino et al., Jul. 23, 1933 (SAPS); E. Coast, Ponkotan <54->, T. Miyake, Sep. 13, 1906 (SAPS); Kitashiretoko Peninsula, Rosoku-iwa <55-upper l.>, Y. Hoshino et al., Jul. 22, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS).

SOUTH. Maguntan <57-lower l.>, S. Saito, Aug. 5, 1929 (TI); Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura Aug. 12, 1940 (TI); Kusunnai <58-upper r.>, K. Miyabe & T. Miyagi, Aug. 9, 1906 (SAPS); E. Coast, Manue <59-upper l.>, T. Miyake, Sep. 22, 1906 (SAPS); Shirahama <61-upper r.>, T. Naito, Aug. 8, 1931 (MAK 48362); Fukakusa (Kurokawa) <61-lower r.>, S. Sugawara, Aug. 1, 1924 (SAPS); Dobuki <62-upper l.>, G. Nakahara, Jun. 24, 1906 (TNS); E. Coast, Naibuchi <62-upper l.>, T. Miyake, Sep. 26, 1906 (SAPS); Sakaehama <62-upper l.>, Y. Narita, Aug. 25, 1923 (TI- 2 sheets); Sakaihama <62-upper l.>, S. Saito (3673), Jul. 29, 1929 (TI- 2 sheets); Sakaehama <62-upper l.>, G. Koidzumi, Aug. 12, 1930 (KYO); Lake Shiratori, lakeside <62-upper l.>, S. Sugawara 17949 & 17950, Jun. 15, 1932 (SAPT- 2 sheets); 8 Km N of Dolinsk, Nayba River <62-upper l.>, H. Takahashi 29316, Jul. 23, 2001 (SAPS); Kurokawa <62-lower l.>, S. Sugawara 17943, Sep. 12, 1921 (SAPT); Tumi <62-lower l.>, Y. Kudo & B. Ishida 7472, Sep. 6, 1923 (SAPS); Kotani <62-lower l.>, S. Sugawara 17946, Sep. 1, 1930 (SAPT); Kurokawa mire <62-lower l.>, H. Hara, Jul. 31, 1931 (TI- 2 sheets); 6km W of Sokol town, Mal. Takoy River <62-lower l.>, H. Takahashi 29189, Jul. 20, 2001 (SAPS); Ryutoka River <64-lower r.>, G. Nakahara, Jul. 9, 1906 (TI); Vladimirohuka <65-upper l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Nagahama-gun, Toyokita-mura, Konuma <65-upper l.>, H. Sase, Agu. 15, 1937 (SAPS); Mitsuriohuka <65-lower l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Vspenskoe <65-lower l.>, T. Miyake, Sep. 30, 1906 (SAPS); Korsakovsky distr., Susuya moor, around old-Enoura stat. <65-lower l.>, S. Tsuji et al. 809009, Aug. 9, 1996 (TI); Mt. Susuya-dake <65-upper r.>, S. Sugawara 17944, Sep. 21, 1927 (SAPT); E. Coast, Aberasani <66-lower r.>, T. Miyake, Jun. 28, 1908 (SAPS); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 19, 1908 (SAPS); Notoro–Kiridoshi <73-lower r.>, K. Kondo, Sep. 3, 1929 (TI).

[No Locality]. Komatu, 1909 (TI- 8 sheets); [no collector's name], 1932 (MAK 102694); Komatu, [no date] (TI-3 sheets).

<THE KURILS>

NORTH. ATLASOVA <01>. Sekine-zaki, S. Ito & G. Komori, Jul. 11, 1926 (SAPS); Minamiura, H. Ito & G. Komori, Jul. 17, 1926 (SAPS). SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); Bettobi, S. Yokoyama, Sep. 22, 1893 (SAPS); [no locality], T. Ishikawa, Jun. 29, 1894 (SAPS); [no locality], K. Yendo, Jul. 20, 1903 (TI); [no locality], [no collector's name], Sep., 1917 (MAK 102705); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5647, Jul. 28, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23302, Aug. 8, 1997 (SAPS); S of Pochtareva Cape, Y. Kuwahara 149, Aug. 8, 1997 (SAPS); SW of Baikovo, H. Takahashi 28005, Jul. 24, 2000 (SAPS). PARAMUSHIR <03>. Ottomoi, S. Yokoyama, Sep., 1893 (SAPS); [no locality], T.

Sakurai, Aug., 1910 (SAPS); Murakami-wan, Y. Kudo 4948, Jul. 3, 1920 (SAPS); Yotsuiwahana, Y. Kudo 5180, Jul. 12, 1920 (SAPS); Yotsuiwahana, Y. Kudo 5307, Jul. 14, 1920 (SAPS); Hiratazaki, Y. Kudo 5386, Jul. 21, 1920 (SAPS); Shirakawa, Y. Kudo 5606, Jul. 30, 1920 (SAPS); Tomarizaki, Y. Kudo 5711, Aug. 7, 1920 (SAPS); Urafutoyama, Y. Kudo 5813, Aug. 8, 1920 (SAPS); [no locality], K. Numajiri, Aug., 1926 (KYO); Mt. Chikura-dake, Y. Okada, Jul. 30, 1931 (TNS); Arakawa, Y. Okada, Aug. 11, 1931 (TNS- 2 sheets); [no locality], T. Ohashi, Aug., 1932 (KYO); Arakawa, J. Ohwi & R. Yoshii 222, Jul. 10, 1934 (KYO); Suribachi, J. Ohwi 5347, Jul. 22, 1934 (SAPS); Suribachi, J. Ohwi & R. Yoshii 5538, Jul. 23, 1934 (KYO); Kashiwabara-wan, J. Ohwi & R. Yoshii 5946, Aug. 2, 1934 (KYO); E of Vasil'yeva Bay, H. Takahashi 20987 & 21026, Aug. 3, 1996 (SAPS); Volcano Ebeko, V. Y. Barkalov 97054, Jul. 14, 1997 (SAPS); NE of Mt. Ebeko, H. Takahashi 23177, Aug. 5, 1997 (SAPS).

MIDDLE. MAKANRUSHI <05>. In heaths, M. Tatewaki 11222, Aug. 9, 1928 (SAPS); Zakat Bay, H. Takahashi 24029, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11009, Aug. 8, 1928 (SAPS); Nemo, M. Tatewaki 11130, Aug. 9, 1928 (SAP); Nemo Bay, H. Takahashi 21221, Aug. 4, 1996 (SAPS); N of Lake Chernoye, H. Takahashi 21239, Aug. 4, 1996 (SAPS); N of Angibi Cape, H. Takahashi 21344, Aug. 5, 1996 (SAPS); Mussel Bay–Kol'tsevoye Lake, H. Takahashi 21397, Aug. 7, 1996 (SAPS). KHARIMKOTAN <07>. Severgina Bay, H. Takahashi 21531, Aug. 8, 1996 (SAPS). EKARMA <09>. [no locality], M. Tatewaki 11380, Aug. 11, 1928 (SAPS). SHIASHKOTAN <10>. Zakatnaya Bay, H. Takahashi 21838 & 21839, Aug. 12, 1996 (SAPS- 2 sheets); Zakatnaya Bay, H. Takahashi 21808 & 21809, Aug. 12, 1996 (SAPS- 2 sheets). MATUA <12>. Kitatoko-misaki, M. Tatewaki & Y. Tokunaga 12222, Sep. 5, 1928 (SAPS); Ainuwan, M. Tatewaki & Y. Tokunaga 12260, Sep. 6, 1928 (SAPS); Dvoynaya Bay–Aynu Bay, H. Takahashi 22066 & 22069, Aug. 15, 1996 (SAPS- 2 sheets). RASSHUA <13>. Mikasa, M. Tatewaki & Y. Tokunaga 12428, Aug. 6, 1928 (SAPS); Kitakado, M. Tatewaki & Y. Tokunaga 12431, Aug. 6, 1928 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14915, Aug. 3, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 15023, Aug. 4, 1929 (SAPS); Mt. Choto, M. Tatewaki & K. Takahashi 15106, Aug. 5, 1929 (SAPS); Onuma, M. Tatewaki & K. Takahashi 15167, Aug. 5, 1929 (SAPS); Mt. Choto-zan, M. Tatewaki & K. Takahashi 15315, Aug. 10, 1929 (SAPS); S of Yoriki-hama, H. Takahashi 19170, Aug. 12, 1995 (SAPS). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & Y. Tokunaga 12552, Aug. 11, 1928 (SAPS); [no locality], M. Tatewaki & K. Takahashi 15951, Sep. 14, 1929 (SAPS); SW side to central part, H. Takahashi 22962, Aug. 2, 1997 (SAPS). KETOI <15>. [no locality], M. Tatewaki & Y. Tokunaga 11484, Sep. 1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15179, Aug. 14, 1929 (SAPS); Kodakigawa, M. Tatewaki & K. Takahashi 15308, Aug. 15, 1929 (SAPS); Lake Ketoi, M. Tatewaki & K. Takahashi 15345, Aug. 17, 1929 (SAPS); Ashizaki, M. Tatewaki & K. Takahashi 15440, Aug. 18, 1929 (SAPS); Shimizugawa, M. Tatewaki & K. Takahashi 15645, Aug. 30, 1929 (SAPS); Cape Storozheva, H. Takahashi 19429, Aug. 15, 1995 (SAPS); Stochnyy River, H. Takahashi 19563, Aug. 19, 1995 (SAPS). SIMUSHIR <16>. Broton Bay, M. Tatewaki & Y. Tokunaga 11560, Aug. 5, 1928 (SAPS); Broton Bay, M. Tatewaki & Y. Tokunaga 11592, Aug. 13, 1928 (SAPS); Broton Bay, M. Tatewaki 11670, Aug. 14, 1928 (SAPS); Broton Bay, M. Tatewaki 11758, Aug. 15, 1928 (SAPS); Nakadomari, M. Tatewaki & Y. Tokunaga 11911, Aug. 17, 1928 (SAPS); Wan-oku, M. Tatewaki & Y. Tokunaga 12024, Aug. 22, 1928 (SAPS); Wan-oku, M. Tatewaki 12049, Aug. 25, 1928 (SAPS); Malaya Inlet, H. Takahashi 19478, Aug. 18, 1995 (SAPS); Nakatomari Bay, H. Takahashi 19782, Aug. 22, 1995 (SAPS). CHIRPOI <18a>. Peschanaya Bay, H. Takahashi 19865, Aug. 23, 1995 (SAPS). URUP <19>. Kobune, M. Tatewaki 9818, Aug. 26, 1927 (SAPS); Daibahama, M. Tatewaki 9903, Sep. 1, 1927 (SAPS); Tokotan, M. Tatewaki 10095, Sep. 13, 1927 (SAPS); Natalii Bay, H. Takahashi 18734, Aug. 7, 1995 (SAPS); 15km NE of Van-Der-Lind Cape, M. Ohara, Aug. 26, 1995 (SAPS); NE of Van-Der-Lind Cape, H. Takahashi 20016, Aug. 26, 1995 (SAPS).

SOUTH. ITURUP <20>. Mt. Atoiya-yama, T. Kawakami 180, Aug. 11, 1898 (SAPS); Rakko-zaki, T. Kawakami 281, Aug. 27, 1898 (SAPS); Teinei, T. Kawakami, Aug. 28, 1898 (SAPS); Shimonaibo, K. Miura, Jul. 23, 1906 (SAPS); Toro, K. Miura, Jul. 24, 1906 (SAPS); Porosu–Sokiya, K. Kondo, Jul. 18, 1927 (TI); Oyachi, S. Saito, Aug. 11, 1928 (TI); Porosu, S. Saito, Aug. 14, 1928 (TI); Shana, B. Yoshimura, Aug. 14, 1937 (SAPS- 2 sheets); Moyoro–Shibetoro, B. Yoshimura & H. Yokoyama, Aug. 5, 1938 (SAPS); Oyachi, Chishima-chosasyo, Sep. 15, 1939 (SAPS- 2 sheets); Shibetoro–Moyoro, Chishima-chosasyo, Sep. 15, [no year; prob. 1939] (SAPS- 2 sheets). KUNASHIR <21>. Furukamapp, M. Tatewaki 3250, Jul. 25, 1923 (SAPS, SAPT). SHIKOTAN <22>. Shakotan, K. Miura, Jul. 26, 1906 (SAPS- 2 sheets); Around Shakotan, [no collector's name; prob. H. Takeda], Jul. 17, 1909 (SAPS); Anama, G. Tanaka & Ken. Miyabe, Aug. 4, 1910 (SAPS); Shakotan, G. Tanaka & Ken. Miyake, Aug. 4, 1910 (SAPS); Masuba, G. Tanaka & Ken. Miyabe, Aug. 14, 1910 (SAPS); Mt. Shakotan-yama, S. Saito 1837 & 1867, Aug. 30, 1925 (TI- 3 sheets); Shakotan–Horobetsu, S. Saito, Sep. 4, 1925 (TI); Shakotan, Nodoro–Inemoshiri, S. Saito 1597, Sep. 6, 1925 (TI); [no locality], K. Kondo 7829 & 7840, Aug. 11, 1927 (TI- 3 sheets); Shakotan, K. Kondo, Aug. 4, 1929 (TI); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI); Chiboi, K. Kondo, Aug. 10, 1929 (TI); Anama, K. Kondo, Aug. 28, 1929 (TI- 2 sheets); Tomari, K. Kondo, Sep. 5, 1929 (TI); Chiboi–Umanose, K. Kondo, Sep. 7, 1929 (TI); Matakotan, J. Ohwi, Jul. 19, 1931 (KYO); Notoro, J. Ohwi, Aug. 11, 1931 (KYO); Shakotan, S. T. Ono, Jun. 10, 1932 (SAPS); Shikotanmatsuhara, M. Tatewaki 20644, Jun. 22, 1934 (SAPS); Mt. Notoro, M. Tatewaki 20740, Jun. 25, 1934 (SAPS).

31. **Vaccinium vitis-idaea** L. [Kokemomo] <SAKHALIN>

NORTH. Ado <04-upper l.>, Y. Kudo & B. Ishida 7514, Sep. 7, 1923 (SAPS); Mouth of River Tum' of the Gulf of Nadezhda <04-lower l.>, T. Fukuda 1839 & 1867, Aug. 9, 2001 (SAPS- 2 sheets); SE from Cape of Maria, around the Lake Monchigar <04-upper r.>, T. Fukuda 1703, Aug. 6, 2001 (SAPS- 2 sheets); Near Pilewo, *Larix* forests <04-lower r.>, Y. Kudo & B. Ishida 7100, Aug. 25, 1923 (SAPS); Pirituk, dry peat <07-upper l.>, Y. Kudo & B. Ishida 7148, Aug. 28, 1923 (SAPS); Uruta, alpine meadow on hill <07-lower r.>, Y. Kudo & B. Ishida 7284, Sep. 1, 1923 (SAPS); 15km S of Okha <10-upper r.>, H.

Takahashi 31167, Jul. 28, 2003 (SAPS); E. Coast, S of Gulf Piltun, near the Lake Pilitu <15-lower r.>, T. Fukuda 2251, Aug. 18, 2001 (SAPS); E. Coast, at 52°45' n.l., Nuto–Chaiwo <19-upper l.>, T. Ishikawa, Jul. 6, 1912 (SAPS); Chaio, seacoast <19-lower l.>, Y. Kusano, May 6, 1921 (SAPS); Nogliki–Okha, 5km S of Val <19-lower l.>, H. Takahashi 31122, Jul. 27, 2003 (SAPS); Nyiwo, in arenosis litaralibus <23-lower l.>, Y. Kudo & M. Tatewaki 6491, Aug. 12, 1922 (SAPS); Parukata, in sylvis <26-upper r.>, Y. Kudo & M. Tatewaki 6452, Aug. 10, 1922 (SAPS); Palkata <26-upper r.>, Okada, Aug. 26, 1923 (TI).

MIDDLE. Nabilskiy Mts., Mt. Changa <34-upper r.>, N. Fujii 01182, Aug. 7, 2002 (MAK 346160); NW of Pogranichnoye, S bank of the Langeri River <35-lower r.>, N. Fujii 01298, Aug. 11, 2002 (MAK 346140, SAPS); Pilevo <36-lower l.>, K. Jimbo, Aug. 13, 1907 (TNS); Hinan-ekisha–Aobaeki <36-lower l.>, Y. Kudo & M. Tatewaki 6176, Jul. 30, 1922 (SAPS); Anbetsu, mountain peaks <36-lower l.>, T. Ishiyama, Jul. 16, 1927 (SAPS); Anbetsu, Ooiwa-toge <36-lower l.>, Y. Tokunaga & K. Kawai, Sep. 2, 1929 (SAPS); Aobaeki–Kamionoru <36-upper r.>, Y. Kudo & M. Tatewaki 6204, Jul. 31, 1922 (SAPS); Hamdasa <37-lower r.>, T. Miyake, Aug. 27, 1906 (SAPS, TNS); Hantuza <37-lower r.>, Okada, Aug. 30, 1923 (TI); Higashiyama <38-lower l.>, T. Miyake, Aug. 28, 1906 (SAPS); 20km NE of Smirnykh, banks of the Poronay RAA Mirnyy <38-lower l.>, N. Fujii 01281, Aug. 10, 2002 (MAK 346159); E boundary, Asase <40-lower l.>, Y. Hoshino et al., Aug. 11, 1933 (SAPS); Shisuka-shicho, Chirie-gun, Ennai River, Kumagoe Pass <40-lower l.?>, M. Tatewaki & Y. Takahashi 22583, Jun. 17, 1936 (SAPS); Borodo <43-lower l.>, T. Miyake, Sep. 1, 1906 (SAPS); Shisuka-shicho, Chirie-gun, Mt. Kawashima-yama <45-upper r.>, M. Tatewaki & Y. Takahashi 23000, Jun. 29, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Atsunai <45-upper r.>, M. Tatewaki & Y. Takahashi 23037, Jun. 30, 1936 (SAPS); Shisuka-shicho, Chirie-gun, Naruko-Nirayama <45-upper r.?>, M. Tatewaki & Y. Takahashi 22883, Jun. 26, 1936 (SAPS); Shisuka-shicho, Shibunkoro <45-lower r.>, Y. Hoshino et al., Aug. 6, 1933 (SAPS); Esutoru <46-lower l.>, M. Kawashima, Sep. 16, 1936 (TI- 2 sheets); Poronaysk–Leonidovo <48-upper l.>, H. Takahashi 30530 & 30539, Aug. 13, 2002 (SAPS); E. Coast, Shikka, Ehorokofunai <48-lower l.>, T. Miyake, Aug. 11, 1906 (SAPS); E. Coast, Nayoro <48-lower l.>, T. Miyake, Sep. 6, 1906 (SAPS, TNS); Nayoro <48-lower l.>, T. Miyake, Sep. 7, 1906 (TNS); Tomari [Tomarikishi?], Experiment Forest of Kyoto Univ. <48-lower l.?>, T. Chono, Jul. 20, 1928 (TNS); Shikka <48-upper r.>, K. Miyabe & T. Miyagi, Jul. 23, 1906 (SAPS); Telpenia Bay, Shikka <48-upper r.>, T. Miyake, Aug. 12, 1906 (SAPS); Ramotteiuri <48-upper r.>, T. Miyake, Aug. 15, 1906 (SAPS); Duwatakko <48-upper r.>, T. Miyake, Aug. 16, 1906 (SAPS, TNS); Shisuka <48-upper r.>, I. Namikawa, Aug. 7, 1914 (SAPS); Shisuka <48-upper r.>, Otani & Imai, Jul. 19, 1930 (SAPS); Amiba <48-upper r.>, G. Koidzumi, Aug. 18, 1930 (KYO); Shisuka <48-upper r.>, B. Yoshimura & M. Hara 2, Jul. 10, 1937 (TNS); Shisuka <48-upper r.>, R. Imaseki, Jul. 16, 1941 (TNS); Tobani <48-upper r.?>, T. Miyake, Aug. 20, 1906 (SAPS); Shikka, Taraika <49-upper l.>, K. Miyabe & T. Miyagi, Jul. 27, 1906 (SAPS); Telpenia Bay, Taraika <49-upper l.>, T. Miyake, Aug. 13, 1906 (SAPS); Shisuka-shicho, near Taraika <49-upper r.>, M. Honda & Y. Kimura, Aug. 16, 1940 (TI); Jimutaki <50-upper r.>, K. Miyabe & T. Miyagi, Jul. 24, 1906 (SAPS); Shisuka-shicho, Nishinokoro <50-upper r.>, Y. Hoshino et al., Aug. 16, 1933 (SAPS); Kitashiretoko Peninsula, Noto <51-lower l.>, Y. Hoshino et al., Jul. 14, 1933 (SAPS); Lak. Solenuiya <51-lower r.>, K. Miyabe & T. Miyagi, Jul. 26, 1906 (SAPS); Kitashiretoko Peninsula, Mt. Hokke-yama <51-lower r.>, Y. Hoshino et al., Jul. 22, 1933 (SAPS); Usutomanai <52-upper l.>, K. Miyabe & T. Miyagi, Aug. 14, 1906 (SAPS); Near Ushiro <52-upper l.>, H. Hara, Aug. 3, 1936 (TI); W. Coast, Mt. Ushoro <52-upper r.>, T. Miyake, Aug. 31, 1907 (SAPS, TNS); E. Coast, Ponkotan <54->, T. Miyake, Sep. 13, 1906 (SAPS); E. Coast, Chyakamaushinai <54-lower l.>, T. Miyake, Sep. 19, 1906 (SAPS); Kitashiretoko Peninsula, Rosoku-iwa–Funakoshi <55-upper l.>, Y. Hoshino et al., Jul. 22, 1933 (SAPS); Kitashiretoko Peninsula, Kitashiretoko-misaki <55-lower r.>, Y. Hoshino et al., Jul. 20, 1933 (SAPS).

SOUTH. Raichishi <56-upper l.>, H. Hara 3895, Aug. 3, 1936 (TI); E. Coast, Mt. Nupuripo <57-lower l.>, T. Miyake, Aug. 13, 1907 (SAPS, TNS); E. Coast, Mt. Tosso <57-lower l.>, N. Hiratsuka et al., Jul. 23, 1927 (SAPS); Mt. Tosso, upper part <57-lower l.>, H. Hara, Aug. 5, 1931 (TI); Motodomari-shicho, Mt. Tosso <57-lower l.>, M. Honda & Y. Kimura, Aug. 12, 1940 (TI- 3 sheets); Tsapko to N peak of Mt. Vladimirovka <57-lower l.>, H. Takahashi 29576, Aug. 2, 2001 (SAPS); Mt. Kashipo <57-upper r.>, S. Sugawara 17971, Aug. 27, 1929 (SAPT); Kashipo, Kashipo-dake <57-upper r.>, H. Abumiya et al., Jul. 22, 1932 (SAPS); W. Coast, Kusunnai <58-upper r.>, T. Miyake, Jul. 7, 1906 (SAPS); Kusunnai <58-upper r.>, K. Miyabe & T. Miyagi, Aug. 9, 1906 (SAPS); Kushinnai <58-upper r.>, S. Saito, Aug. 7, 1929 (TI- 2 sheets); Manui <59-upper l.>, S. Komatsu 1371, Aug. 4, 1913 (TI); Manui-sando <59-upper l.>, [no collector's name], Aug. 6, 1913 (TI- 2 sheets); Kitaitada <59-lower r.>, [no collector's name], Aug. 4, 1913 (TI- 2 sheets); Maoka-gun, Habomai <60-lower l.>, Mizukoshi, Aug. 5, 1926 (TNS); Fukakusa <61-lower r.>, S. Sugawara, Sep. 20, 1921 (SAPS); E. Coast, Dubki <62-upper l.>, T. Miyake, Jul. 10, 1906 (SAPS); Dubki <62-upper l.>, K. Miyabe & T. Miyagi, Jul. 22, 1906 (SAPS); Sakaehama <62-upper l.>, [no collector's name], Aug. 2, 1913 (TI); Sakaehama, Experiment Forest of Tokyo Univ. <62-upper l.>, S. Muramatsu, Jul. 8, 1923 (TI); Sakaehama <62-upper l.>, Y. Narita, Aug. 24, 1923 (TI); Sakaehama <62-upper l.>, Y. Narita 2868, Aug. 25, 1923 (TI); Lake Hakucho, lakeside <62-upper l.>, S. Sugawara 17973, Jul. 1, 1928 (SAPT); Sakaehama <62-upper l.>, G. Koidzumi, Aug. 13, 1930 (KYO); Sakaehama <62-upper l.>, H. Hara, Jul. 31, 1931 (TI); Sakaehama <62-upper l.>, S. Sugawara 17974, Jun. 15, 1933 (SAPT); Galkinovlaskoe <62-lower l.>, T. Miyake, Jul. 11, 1906 (SAPS, TNS); Kurokawa <62-lower l.>, S. Sugawara, Jul. 10, 1927 (TI); Kurokawa <62-lower l.>, H. Hara, Jul. 31, 1931 (TI); Kurokawa <62-lower l.>, S. Sugawara, Sep. 10, 1940 (TI); 20km SE of Dolinsk, Shuya River <62-lower r.>, H. Takahashi 30139, Jul. 31, 2002 (SAPS); Kosato <64-lower r.>, [no collector's name], Aug. 22, 1913 (TI); Susuya <65-upper l.>, G. Nakahara, Jul., 1906 (TI); Toyohara <65-upper l.>, G. Koidzumi, Aug. 7, 1930 (KYO); Homutohuka <65-lower l.>, T. Miyake, Jul. 13, 1906 (SAPS); Mitsuriohuka <65-lower l.>, T. Miyake, Jul. 13, 1906 (SAPS); Mitsuriohuka <65-lower l.>, K. Miyabe & T. Miyagi, Aug. 22, 1906 (SAPS); Mt. Susuya <65-upper r.>, T. Miyake, Jul. 27, 1907 (SAPS, TNS); Mt. Susuya, summit <65-upper r.>, H. Hara, Aug. 13, 1928 (TI); Mt. Susuya <65-upper r.>, M. Sato, Jul.

19, 1932 (TI); Mt. Susuya <65-upper r.>, S. Sugawara 17972, Jul. 9, 1936 (SAPT); Chekhovskiy Pass–Mt. Chekhova <65-upper r.>, H. Takahashi 29277 & 29280, Jul. 22, 2001 (SAPS); Peak Chekhov (alt.1045 m), alpine meadow <65-upper r.>, T. Fukuda 1156, Jul. 22, 2001 (SAPS); Peak Chekhov, peak-like rocky place <65-upper r.>, T. Fukuda 1181, Jul. 22, 2001 (SAPS); Near the River Shima <66-upper l.>, T. Fukuda 2441, Aug. 27, 2001 (SAPS); Okhotskoe, Sedykh Lake <66-lower l.>, S. Tsuji et al. 806031, Aug. 6, 1996 (TI); Korsakovsky Distr., Puzin Pen., Krestonoshka <66-lower l.>, S. Tsuji et al. 807014, Aug. 7, 1996 (TI); 30 Km SE of Yuzhno-Sakhalinsk, S of Okhotskoye <66-lower l.>, H. Takahashi 27912, Jul. 19, 2000 (SAPS); Tonnaicha <66-lower r.>, I. Namikawa, Jul. 29, 1914 (SAPS); Airoppu <67lower l.>, K. Miyabe & T. Miyagi, Jul. 31, 1906 (SAPS); Penins. Shiretoko, Mt. Oyakochi <67-lower l.>, T. Miyake, Jun. 25, 1908 (SAPS); Taran'nai <69-upper r.>, [no collector's name], Aug. 21, 1913 (TI); Aniva Distr., Urym–Bachinskaya Rivers <69-upper r.>, S. Noshiro et al. 970703-18, Jul. 3, 1997 (TI); Near Korsakov <70-upper r.>, S. Takeo, Sep., 1905 (SAPS); Otomari <70-upper r.>, K. Numajiri, Jul., 1924 (TNS); Near Korsakov, Larix forests <70-upper r.>, H. Ueda, Oct. 19, 1905 (SAPS); Korsakkoff <70-upper r.>, T. Miyake, Jun. 14, 1906 (TNS); Aniwa Bay, Korssakoff <70-upper r.>, T. Miyake, Jun. 19, 1906 (SAPS); Korssakoff <70-upper r.>, K. Miyabe & T. Miyagi, Jul. 12, 1906 (SAPS); Korssakoff <70-upper r.>, K. Miyabe & T. Miyagi, Aug. 4, 1906 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, T. Miyake, Jul. 10, 1907 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, T. Miyake, Jul. 14, 1907 (SAPS); Aniwa Bay, Ootomari <70-upper r.>, T. Miyake, Jul. 16, 1907 (SAPS, TNS); Korsakof <70-upper r.>, U. Faurie, Jun., 1908 (KYO); Korsakof <70-upper r.>, U. Faurie, Jul., 1908 (KYO); Korsakof <70-upper r.>, U. Faurie, Jul. 8, 1908 (KYO); Ohtomari <70-upper r.>, Y. Narita 276, Aug. 20, 1923 (TI); Ohtomari <70-upper r.>, K. Numajiri, May 14, 1925 (TNS); Ohtomari, forests <70-upper r.>, H. Hara, Aug. 12, 1928 (TI- 2 sheets); Ohdomari <70-upper r.>, S. Saito, Jul. 24, 1929 (TI- 2 sheets); Ohtomari-cho, Fujigaoka <70-upper r.>, H. Sase, May 29, 1932 (SAPS); Ohtomari <70-upper r.>, H. Hara, Jul. 28, 1936 (TI- 2 sheets); Aniwa Bay, Chipisani <71-upper l.>, T. Miyake, Jul. 20, 1908 (SAPS, TNS); Aniwa Bay, Mt. Otairenko <71-upper l.>, T. Miyake, Jul. 22, 1908 (SAPS); Ozerskiy, S of the Lake Mal. Chibisanskoye <71-upper l.>, T. Fukuda 1350, Jul. 28, 2001 (SAPS); Nagahama-gun, Tobuchi-mura, Nozuki <71-upper r.>, H. Sase, Sep. 15, 1935 (SAPS- 2 sheets); Mt. Omanbetsu <72-lower l.>, T. Miyake, Jul. 15, 1908 (SAPS); Tohkushi <73-upper l.>, S. Sugawara 17970, Jul., 1929 (SAPT); Todomoshiri, Mt. Dainan <73-lower l.>, T. Miyake, Jul. 26, 1906 (SAPS, TNS); Kaiba Isl. <73-lower l.>, S. Komat, Aug. 12, 1915 (TI); Todomoshiri, Mt. Dainan <73-lower l.>, Kimoto, Murayama & Takee, Jul. 26, 1931 (SAPS); Mt. Shiretoko-Juzozan <74-upper l.>, T. Miyake, Jul. 11, 1908 (SAPS, TNS).

[No Locality]. In silvis, U. Faurie, Oct., 1907 (KYO- 2 sheets); Komatu, 1909 (TI- 3 sheets); [no collector's name], Aug. 14, 1913 (TI); [no collector's name], Sep., 1932 (TI); Komatu, [no date] (TI- 2 sheets); T. Iishiba, [no date] (TI- 2 sheets).

<THE KURILS>

NORTH. ATLASOVA <01>. Minami-ura, Maruyama, S. Ito & G. Komori, Jul. 4, 1926 (SAPS); Minami-ura, S. Ito & G. Komori, Jul. 17, 1926 (SAPS). SHUMSHU <02>. [no locality], S. Seki, 1895 (SAPS); [no locality], S. Gunji, 1898 (SAPS); Takaoka [?], K. Endo, Aug. 17, 1903 (SAPS); [no locality], [no collector's name], Sep., 1917 (MAK 102776); Kataokawan, M. Tatewaki 17255, May 30, 1930 (SAPS); Tenzin-iwa, Y. Okada, Aug. 16, 1931 (TNS); Mt. Tenzin-yama, J. Ohwi & R. Yoshii 5633, Jul. 28, 1934 (KYO); S of Pochtareva Cape, H. Takahashi 23317, Aug. 8, 1997 (SAPS). PARAMUSHIR <03>. Kashiwabara-wan, S. Yokoyama, Sep. 9, 1893 (SAPS); Musashi-wan, M. Aizawa, Jun. 22, 1900 (SAPS); Murakamiwan, Y. Kudo 4947, Jul. 3, 1920 (SAPS); Nagaiwasaki, Y. Kudo 5135, Jul. 11, 1920 (SAPS); Shirakawa, Y. Kudo 5607, Jul. 30, 1920 (SAPS); Tomarizaki, Y. Kudo 5741, Aug. 7, 1920 (SAPS); Urafuto-yama, Y. Kudo 5812, Aug. 8, 1920 (SAPS); Atenkeshi, M. Tatewaki 17283, Jun. 2, 1930 (SAPS); Mt. Chikura-dake, Y. Okada, Jul. 30, 1931 (TNS); Kuzira-hama, K. Kojima, Jul. 31, 1932 (TNS); [no locality], T. Ohashi, Aug., 1932 (KYO); Nasauchi-kaigan, K. Kojima, Aug. 11-13, 1932 (TNS); Suribachi, J. Ohwi 233, Jul. 8, 1934 (SAPS); Arakawa, J. Ohwi & R. Yoshii 206, Jul. 10, 1934 (KYO); Arakawa, J. Ohwi & R. Yoshii 233, Jul. 10, 1934 (KYO); Suribachi-wan, J. Ohwi & R. Yoshii 5445, Jul. 22, 1934 (KYO); E of Vasil'yeva Bay, H. Takahashi 20983, Aug. 3, 1996 (SAPS). [Island Uncertain; Shumshu or Paramushir], K. Fujita, [no date] (TNS).

MIDDLE. MAKANRUSHI <05>. In heaths, M. Tatewaki 11221, Aug. 9, 1928 (SAPS); Zakat Bay, H. Takahashi 24004, Aug. 18, 1997 (SAPS). ONEKOTAN <06>. Nemo, M. Tatewaki 11050, Aug. 8, 1928 (SAPS); Minamiura, M. Tatewaki 17317, Jun. 6, 1930 (SAPS); Nemo Bay, H. Takahashi 21244, Aug. 4, 1996 (SAPS). KHARIMKOTAN <07>. Nishiura, M. Tatewaki 17211, May 28, 1930 (SAPS); [no locality], M. Tatewaki 17301, Jun. 4, 1930 (SAPS); Severgina Bay, H. Takahashi 21532, Aug. 8, 1996 (SAPS). EKARMA <09>. [no locality], M. Tatewaki 11379, Aug. 11, 1928 (SAPS). SHIASHKOTAN <10>.[no locality], T. Ishikawa, Jun. 23, 1894 (SAPS); Otomewan, M. Tatewaki 17341, Jun. 6, 1930 (SAPS); Zakatnaya Bay, H. Takahashi 21804, Aug. 12, 1996 (SAPS). RAIKOKE <11>. E side of island, H. Takahashi 21904 & 21911, Aug. 13, 1996 (SAPS). MATUA <12>. [no locality], Kodama, Aug., 1893 (SAPS); Ainuwan, M. Tatewaki & Y. Tokunaga 12256, Sep. 6, 1928 (SAPS); Yamatowan, M. Tatewaki 12306, Sep. 10, 1928 (SAPS); Isl. Banjo, E. Taketomi, Jul. 10, 1936 (SAPS); Dvoynaya Bay, H. Takahashi 22012, Aug. 14, 1996 (SAPS). RASSHUA <13>. Kitakado, M. Tatewaki & Y. Tokunaga 12434, Aug. 6, 1928 (SAPS); Mikasa, M. Tatewaki & Y. Tokunaga 12399, Aug. 6, 1928 (SAPS); Nakadomari, M. Tatewaki & K. Takahashi 14898 & 14958, Aug. 3, 1929 (SAPS-2 sheets); Nakadomari, in heath, M. Tatewaki & K. Takahashi 14904, Aug. 3, 1929 (SAPS); Near Nakadomari, M. Tatewaki & K. Takahashi 14914, Aug. 3, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 15009, Aug. 4, 1929 (SAPS); Onuma, M. Tatewaki & K. Takahashi 15168, Aug. 5, 1929 (SAPS); Sonrakuwan, M. Tatewaki & K. Takahashi 15265, Aug. 8, 1929 (SAPS); Mt. Chotozan, M. Tatewaki & K. Takahashi 15314, Aug. 10, 1929 (SAPS); S of Yoriki-hama, H. Takahashi 19155 & 19158, Aug. 12, 1995 (SAPS). USHISHIR-RYPONKICHA <14a>. [no locality], M. Tatewaki & Y. Tokunaga 12581,Aug.

11, 1928 (SAPS); [no locality], M. Tatewaki & K. Takahashi 15927, Sep. 4, 1929 (SAPS). USHISHIR-YANKICHA <14b>. In heath, M. Tatewaki & K. Takahashi 15813, Jul.30, 1929 (SAPS); Kraternaya Bay, H. Takahashi 19670, Aug. 20, 1995 (SAPS); Mountain ridge, H. Takahashi 22901, Aug. 1, 1997 (SAPS). KETOI <15>. [no locality], M. Tatewaki & Y. Tokunaga 11526, Sep. 1, 1928 (SAPS); Minami, M. Tatewaki & K. Takahashi 15189, Aug. 14, 1929 (SAPS); Minamidai, M. Tatewaki & K. Takahashi 15541, Aug. 22, 1929 (SAPS); Todozaki, M. Tatewaki & K. Takahashi 15741, Sep. 4, 1929 (SAPS); Stochnyy River, H. Takahashi 19569, Aug. 19, 1995 (SAPS). SIMUSHIR <16>. Broton-wan, Kodama, Jun., 1893 (SAPS); [no locality], Cap. Uzawa, Sep., 1927 (SAPS); Broton Bay, M. Tatewaki & Y. Tokunaga 11559, Aug. 5, 1928 (SAPS); Broton Bay, M. Tatewaki & Y. Tokunaga 11591, Aug. 13, 1928 (SAPS); Yamagoshizaki, M. Tatewaki & Y. Tokunaga 11788, Aug. 16, 1928 (SAPS); Broughton Bay, M. Tatewaki & K. Takahashi 16014, Jul. 26, 1929 (SAPS); Simushir, M. Tatewaki 11859, Sep. 13, 1929 (SAPS); Malaya Inlet, H. Takahashi 19470, Aug. 18, 1995 (SAPS); Nakatomari Bay, H. Takahashi 19738, Aug. 22, 1995 (SAPS). CHIRPOI <18a>. Peschanaya Bay, H. Takahashi 19866, Aug. 23, 1995 (SAPS). BRAT CHIRPOEV <18b>. Uglovaya Bay, H. Takahashi 28491, Aug. 4, 2000 (SAPS). URUP <19>. Suribachiyama, K. Jimbo, Jun. 16, 1891 (SAPS, TI); Anama–Yoshinohama, K. Uchida, Jun. 17, 1891 (SAPS); Yoshinohama, K. Uchida, Jun. 18, 1891 (SAPS- 2 sheets); Anama, K. Jimbo, Jun. 18, 1891 (SAPS); Tokotan, T. Ishikawa, Jul. 23, 1894 (SAPS); Boat Harbor, T. Kitahara, Aug. 30, 1895 (SAPS); [no locality], K. Miura, Jul. 8-9, 1906 (SAPS); Kobune, M. Tatewaki 9827, Aug. 26, 1927 (SAPS); Tokotan, M. Tatewaki 9692, Aug. 29, 1927 (SAPS); Onsen-zaki, M. Tatewaki 10061, Sep. 9, 1927 (SAPS); Kobune, M. Tatewaki 17194, May 18, 1930 (SAPS); Tokotan, M. Tatewaki 17461, Jun. 10, 1930 (SAPS); Otkrytyy Bay, H. Takahashi 18565, Aug. 5, 1995 (SAPS); Natalii Bay, H. Takahashi 18609, Aug. 6, 1995 (SAPS); Natalii Bay, H. Takahashi 18741, Aug. 7, 1995 (SAPS); 15km NE of Van-Der-Lind Cape, M. Ohara, Aug. 26, 1995 (SAPS); Barhatnyy Bay, H. Takahashi 20090, Aug. 28, 1995 (SAPS); Tetyayeva Bay, H. Takahashi 22246, Aug. 21, 1996 (SAPS).

SOUTH. ITURUP <20>. Furubetsu, K. Miyabe, Jul. 28, 1884 (SAPS); Rubetsu River, S. Yokoyama, Aug. 23, 1893 (SAPS); Mt. Moyoro-yama, K. Fukuzawa, Aug. 27, 1893 (SAPS- 2 sheets); Furebetsu, Y. Tanaka, Aug. 27, 1895 (SAPS); Mt. Moyoro-yama, T. Kawakami 199, Aug. 12, 1898 (SAPS); Shana, K. Miura, Jul. 11, 1906 (SAPS); Shana–Bettofu, K. Miura, Jul. 13, 1906 (SAPS); Bettobu–Shamanbetsu, K. Miura, Jul. 13-14, 1906 (SAPS); Shibetoro, K. Miura, Jul. 19, 1906 (SAPS); Mt. Moyoro, G. Tanaka & Ken. Miyabe, Jul. 17, 1910 (SAPS); Shibetoro–Moyoro, G. Tanaka & Ken. Miyabe, Jul. 18, 1910 (SAPS); Bettobu, G. Tanaka & Ken. Miyabe, Jul. 23, 1910 (SAPS); Shana-ko, K. Kondo 2114, Jul. 11, 1927 (TI); Shana–Bettobi, K. Kondo no number & 1949, Jul. 13, 1927 (TI- 2 sheets); Shamanbe, K. Kondo, Jul. 14-15, 1927 (TI- 2 sheets); Mt. Atoiya, K. Kondo, Jul. 21, 1927 (TI); Sokiya–Shibetoru, S. Saito, Aug. 8, 1928 (TI); Shibetoru, S. Saito, Aug. 10, 1928 (TI); Oyachi, S. Saito, Aug. 11, 1928 (TI); Bettobi–Tanimusyo, S. Saito (6144), Aug. 16, 1928 (TI, TNS); Bettobi–Tanimusyo, S. Saito, Aug. 16-17, 1928 (TI); Bettobi, B. Yoshimura, Aug. 11, 1937 (SAPS); Mt. Atosa-yama, B. Yoshimura, Aug. 14, 1939 (SAPS); Shana, Chishima-chosasyo, Aug. 17, 1939 (SAPS); Furibetsu, Chishima-chosasyo, Aug. 25, [no year; prob. 1939] (SAPS); Shibetoro vill., near mouth of Hiraitogawa River, T. Azuma et al. 3043, Jun. 13, 2002 (SAPT). KUNASHIR <21>. Zenbekotan, H. Tanaka, 1895 (SAPS); [no locality], [no collector's name], 1935 (KYO- 2 sheets); Tomari-mura, T. Ishikawa, Jul. 9, 1894 (SAPS); Uennai, C. Endo, Jul. 17, 1894 (SAPS); Keramui-misaki, C. Endo, Sep. 29, 1894 (SAPS); Tobutsu, S. Sasa, Jul. 9, 1908 (SAPS); Furukamapp, M. Tatewaki 3393, Jul. 26, 1923 (SAPS); Nikishiro, M. Tatewaki 3541, Jul. 29, 1923 (SAPS); Mt. Rausu, H. Ishikawa 3696, Aug. 1, 1923 (SAPS); Furukamappu, J. Ohwi, Aug. 13, 1923 (TNS); [no locality], N. Watanabe, Sep. 2, 1923 (TNS); Atoiya, M. Nagai & M. Shimamura, Aug. 3, 1929 (SAPS); Tomari, H. Ohtani, Aug. 9, 1929 (SAPS); Furukamappu, Y. Matsumura, Jul. 20, 1930 (KYO); Mt. Tomari, M. Tatewaki 25526, Aug. 20, 1936 (SAPS); Chibukaribetsu–Zaimokuiwa, K. Ito, Jun. 16, 1939 (SAPS); Mt. Rausu, K. Ito, Sep. 22, 1939 (SAPS). SHIKOTAN <22>. Inemoshiri, S. Yokoyama, Aug. 2, 1890 (SAPS); Shakotan, T. Kawakami 512, Aug. 1, 1898 (SAPS); Shakotan, K. Miura, Jul. 26, 1906 (SAPS); Shakotan–Chipoi, [no collector's name; prob. H. Takeda], Jul. 18, 1909 (SAPS); Anama, Arai, Sep. 24, 1909 (TNS); Anama, G. Tanaka & Ken. Miyabe, Aug. 14, 1910 (SAPS); Anama, M. Arai, Aug. 15, 1910 (SAPS); [no locality], A. Abe, Jul. 16, 1924 (TNS); Shakotan, S. Ono, Aug. 8, 1925 (TNS); Shakotan, Nodoro–Inemoshiri, S. Saito 1602, Sep. 6, 1925 (TI); [no locality], K. Kondo 7841, Aug. 11, 1927 (TI); Shakotan, K. Kondo, Aug. 4, 1929 (TI); Mt. Shakotan, K. Kondo, Aug. 6, 1929 (TI- 2 sheets); Horobetsu–Okkaibetsu, K. Kondo, Aug. 31, 1929 (TI- 2 sheets); Chiboi–Umanose, K. Kondo, Sep. 7, 1929 (TI); Shakotan, S. T. Ono, Jun. 29, 1930 (SAPT, TI); Shakotan, J. Ohwi, Jul. 22, 1931 (KYO); Umanose, J. Ohwi, Jul. 31, 1931 (KYO).